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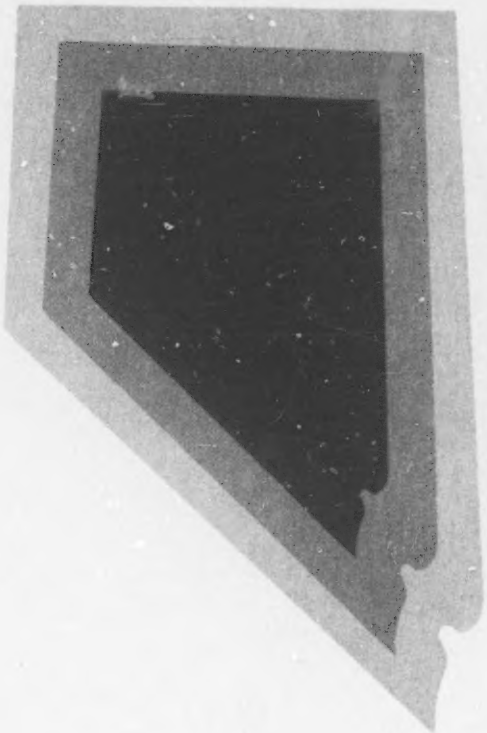

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The Commercial Structure of Nevada's Economy and Prospects for Development

*By John L. Dobra and Thomas R. Harris**

The research on which this paper is based was funded in part by the Nevada Mining Association.

The authors consider prospects for economic development and diversification of Nevada's economy. Beginning with an overview of economic issues related to the non-gaming economy of the state (Sec. 1), the authors note the contribution of the gaming and tourism industry to past growth. They question the ability of tourism to sustain or improve the rapid rate of economic and population growth that it has induced in the state's economy over the past two decades.

The second section presents data and the results of an export base analysis of the current state of development of Nevada's non-gaming, and largely, non-metropolitan commercial structure — the "other" economy. This focus is warranted because of an interest in economic diversification and development in non-metropolitan areas of the state.

Finally, the last section uses a very elementary theory of regional economic growth, based on the principles of market size and comparative advantage, to relate these analyses and data to a discussion of obstacles and relative advantages facing the state in its efforts to influence both the pace of economic growth and its characteristics. The recent U.S. Bureau of Census population projection, that Nevada will be the fastest growing state through the year 2000, helps focus the discussion on the implications of basic economic principles of market size, comparative advantage, and regional development, as well as on ways in which the state can cope with the problems presented by rapid growth and take advantage of it.

I. Introduction

Fundamental to understanding almost any statistic related to Nevada's economic health, such as unemployment, taxable sales, or traffic counts on interstate highways, is the dominance of the state's private and public sector affairs by the gaming industry. In 1982, 26% of all employment was in the tourist oriented gaming sector. When we recognize that this 26% of the total is actually 60% of the state's export base that drives the local economy, it is clear that 60% of all employment in the state is derived directly or indirectly from gaming and tourism.

**John L. Dobra is Assistant Professor of Economics, College of Business Administration, University of Nevada, Reno, and Thomas R. Harris is Assistant Professor of Agricultural and Resource Economics, Fleischmann College of Agriculture, UNR.*

However, in considering the state's economic prospects, it becomes apparent from public discussion that the non-gaming economy and its development prospects have become areas of significant interest. Consequently, in this attempt to examine the commercial structure of the state's economy and relate this structure to prospects for diversification and development, it is necessary to focus on this "other," non-gaming economy. This other economy is principally natural resource oriented, based on agriculture, mining, and the pure rents generated by being a cross-roads adjacent to California, the nation's most populous state and one of the wealthiest. Specific economic issues related to this other economy that are examined below include the geographic structure of commercial centers in the state and their markets, the industry mix, and the linkages between the natural resource based economy of non-metropolitan Nevada and the gaming, tourism, and distribution based economies of the metropolitan areas of the state.

The perceived importance of this other economy is well founded in view of both short run and long run considerations. In the recession of 1981-82, the gaming and tourist industries have been hit harder than ever before. This, in turn, has apparently ended the debate on whether the industry is "recession proof."[1]

Long run prospects for the industry are not much better. In fact, Nevada's gaming industry shows some characteristics of a maturing industry. It is, in a sense, the victim of its own successes in gaining legitimacy and profitability. Its relative market size and market share are shrinking as it faces increased competition from Atlantic City and the liberalization of restrictions on gambling throughout the U.S.[2] While the industry still shows considerable vitality, it may not be reasonable to suppose that it can be the basis for the rapid growth that it has fostered for the past three decades. Some recent evidence on this issue that has come to our attention shows that in coming out of the recession of 1981-83, northern Nevada gaming revenues have rebounded much more strongly than those in southern Nevada. The North, which has traditionally served a smaller, and largely regional market, has been better able to re-gain ground lost in recession that has the South, which has traditionally relied more heavily on national and international markets for which it now finds itself in competition with New Jersey.[3]

These perspectives on the gaming industry's future are clearly speculative. We cannot substantiate these specu-

lations nor can they be disproved. They are merely offered as a point of departure from more conventionl discussions of the state's economic growth and development prospects. By raising the *possibility* that gaming may become a declining industry in the future, we only suggest a reason why looking at alternative sources of growth and development is prudent. Clearly, we do not advocate killing, or even harming, "the goose that lays the golden eggs" just because it has matured.

II. The Structure of Nevada's Economy

The starting point for an investigation of a regional economy is the identification of its *export base* and its linkages to a local *infrastructure*. The export base refers to businesses whose output is purchased with incomes earned outside of the regional economy being studied. The local infrastructure refers to businesses whose output is purchased with incomes earned locally in either the export base or within the local infrastructure itself. As noted above, the state's dominant export base industry is gaming, which is estimated to be 60% of the export base. Outside the gaming dominated metropolitan economies, however, mining and agriculture are dominant. The local infrastructure in both metropolitan and nonmetropolitan areas consists of the wholesale and retail trade sector, financial, insurance, and real estate services, medical services, state and local government, and construction, which are all oriented to local markets.

This distinction between export base industries and a local infrastructure oriented toward local markets derives from the export-led growth hypotheses associated with North.[4] This hypothesis holds that increases in regional income are induced by growth in the export sector, or the achievement of local comparative advantage in the national and international economies which promote local economic development and diversification. The export sector, of course, is specialized. That is, the income of the export sectors is determined by their degree of specialization and comparative advantage relative to their competitors. This ability to compete on some outside market derives from some local advantage that lowers the costs of local suppliers relative to competitors. Legalization of casino gambling is an extreme example of comparative advantage: in Nevada and Atlantic City, New Jersey, gambling activities are permitted that would bring prison sentences in other states. Nevada's mineral wealth is another comparative advantage of the state. From a historical point of view, it is clear that these comparative advantages have been the prime movers of the state's economy. From a future oriented perspective, however, the source of comparative advantage is an issue that is addressed briefly in section 3. Nonetheless, the advantages of specialization are clear and based on the principles laid out by Adam Smith. However, following his famous caveat, growth from "specialization is limited by the extent of the market,"[5] or what we refer to below as market size.

In brief, the local economy expands as incomes earned in the export sector are spent and re-spent in the local infrastructure. Consequently, total regional income is a multiple of export base income and the magnitude of the "multiplier effect" depends on the proportion of local incomes that must be spent on goods and services produced outside of the local economy, or, imports. Because of the lack of diversification, these imports, e.g., food stuffs from California, machinery and supplies produced outside of Nevada, limit the respending of incomes in the local infrastructure and, consequently, diminish the multiplier effect. Accordingly, the multiplier effect can be viewed as a measure of the local economy's ability to capture locally earned export base incomes in the form of consumer spending that generates commercial development.

The initial phase of this research involved estimating the size of this multiplier effect using a statistical analysis of statewide and county employment and payroll data. The results are described in some detail below. At the statewide level the analysis shows estimated employment and payroll multipliers of 2.26 and 2.28 respectively. This is interpreted to mean that for each job and payroll dollar generated in the export sectors of the state, an additional 1.26 jobs and $1.28 in payrolls are generated in the local infrastructure.

These estimates are somewhat lower than multipliers from more populous and more industrialized areas in the U.S., such as Michigan, which has an estimated employment multiplier of 2.45.[6] However, our estimates of Nevada's multipliers are comparable and even slightly higher than the average for states in the intermountain region. A recent 10 state study showed employment multipliers of 2.14 in Arizona, 2.28 in Colorado, 1.76 in Idaho, 2.14 in Montana, 1.93 in New Mexico, and 2.20 in Utah.[7]

While these statewide multipliers are of some interest for relating the long run relationship between the size of the export base and the locally oriented infrastructure, Nevada's statewide multipliers reflect the impact of gaming. Consequently, Nevada's other economy is best viewed by examining county data. Table 1 presents ordinary least square estimates of each county's employment and payroll multipliers.[8]

TABLE 1

Estimated Employment and Payroll Multipliers By County, 1969-81

County	Employment	Payrolls
Carson City	2.65	2.78
Churchill	2.87	2.81
Clark	2.27	2.30
Douglas	1.71	1.73
Elko	2.14	2.14
Esmeralda	1.86	1.51
Eureka	1.68	1.38
Humboldt	2.88	3.19
Lander	1.42	1.43
Lincoln	2.02	1.78
Lyon	2.36	2.01
Mineral	2.29	2.33
Nye	1.55	1.56
Pershing	1.69	1.44
Storey	0.99	1.84
Washoe	2.20	2.33
White Pine	0.54	1.87
All Counties	2.26	2.28

In interpreting the results above, several technical points should be noted. First, because the data are for a time series and each year's employment and payrolls are strongly correlated to those of the previous year, the estimates suffer from serial correlation problems. This results in biases in measures of statistical significance. Since interpretation of these measures is likely to be misleading, they have been omitted from the table. Nonetheless, in spite of this serial correlation problem, the multiplier estimates themselves are unbiased. As a practical matter, the serial correlation problem only means that these multipliers should not be used for short run forecasting.

A second technical point is that, by definition, the multiplier cannot be less than one. In a case where it is essentially equal to one, as in Storey County's employment multiplier, it implies that changes in total employment in the county are directly proportional to changes in the export base. While this is possible in Storey County because of its proximity to larger commercial centers in Reno, Sparks, and Carson City, the large difference between the employment and payroll multipliers for Storey County suggests that the employment multiplier for that county is an under-estimate. White Pine County provides another clear case of an under-estimated employment multiplier. In this case the under-estimation resulted from the relatively large scale reduction in employment in the county's export base that occurred midway through the sample period because of the closing of mining and milling operations in the county.

Putting these technical points aside, Table 1 provides a revealing look at the state's commercial structure. First, note that in most counties with relatively low multipliers such as Esmeralda, Eureka, Lander, Lincoln, Nye, and White Pine, most have small populations, relatively little development, and with certain qualifications, boast no major commercial centers. The consequence of this lack of development is that although basic sector jobs and payrolls are generated in a natural resource based (mining and agriculture) economy, there is very little development of a locally oriented infrastructure. This fact is due primarily to the lack of market size needed to achieve specialization and diversification of local business. Consequently, incomes earned in the basic sector of the local economy tend to "leak out" and are not spent locally. An important implication of these leakages, or spillovers, examined below, is that local governments have difficulty in raising funds from a sales tax.

The remaining non-metropolitan counties with multipliers higher than the state average, in contrast, tend to have larger populations but, more importantly, tend to have relatively larger commercial centers and/or face relatively less competition. These major centers, and particularly Winnemucca and Elko, benefit from their own larger market size as well as "leakages" into Humboldt and Elko counties from the counties with lower than average multipliers.

In an effort to further document and explore the inter-county and interstate commercial patterns suggested by the multiplier analysis, the Bureau of Business and Economic Research conducted a survey in selected areas of the state in conjunction with a study of the economic impacts of mining for the Nevada Mining Association. Thirty-two mailed questionnaires were completed by personnel at mining operations in the central and northern part of the state. In addition, a number of interviews with both mining personnel and local businessmen supplemented the formal written questionnaires.

Of interest in both written questionnaires and personal interviews was where personnel working at mines lived, shopped for groceries, used banking and medical services, made major purchases, and where they went for weekend entertainment. Respondents were asked where employees lived and then, for those living in a particular location, where they were most likely to make various purchases, next most likely, etc. Results of the survey from Nye, Elko, and Humboldt counties are discussed in some detail below. Results from these counties are focused on here because there were sufficient numbers of responses from them, and because these counties provide a good illustration of the pattern of expenditure leakages between counties and between commercial centers in Nevada and those in neighboring states.

Perhaps one of the most surprising findings from the multiplier analysis and survey results was the size of Humboldt County's multipliers (2.88 and 3.19 for employment and payrolls, respectively) and, hence, the size of its commercial market. Survey returns from Humboldt County were limited in number but very consistent in showing that employees at mining sites in the county spend a large percentage of their incomes within the county. In naming the "most likely place of purchase" for groceries, banking services, medical care, and major purchases, respondents all named Humboldt County, and principally, Winnemucca. When asked the "next most likely place of purchase" responses spread out to include Washoe County and Nampa/Caldwell, Idaho for some of all purchase categories except groceries.

While these responses show a large degree of commercial self-sufficiency, it should be noted that much of the strength of Winnemucca's economy is derived from surrounding counties. In particular, Pershing and Lander counties show relatively low multipliers, hence, large leakages of consumer spending which, to a large degree, are leakages to Winnemucca. Eureka County, although closer to Elko, also contributes to Winnemucca's economy.

It is interesting to contrast the case of Winnemucca, Humboldt County, with Elko County. The latter had an estimated population of 18,791 in mid-1981 while Humboldt County had 10,782.[9] Hence, Elko benefits from a larger market size. Yet, the multipliers estimated above indicate that, for its size, Elko has a relatively less developed local infrastructure and the survey data indicate that this is because Elko faces relatively more competition. The strength and source of this competition can be seen in Tables 2 and 3 below.

TABLE 2

Most Likely Place of Purchase for Elko County Respondents

County or City	Groceries	Bank	Medical	Major Purchase	Entertainment
Elko	100%	100%	100%	33%	100%
Salt Lake City				17%	
Twin Falls				50%	

Table 2 shows relatively little leakage except in the major purchase catgory where half of the respondents identified Twin Falls, Idaho, as the "most likely place of purchase" and one sixth named Salt Lake City. The table shows a much larger dispersion in Elko than in Humboldt County. The "major purchase" category appears hardest hit by outside competition, indicating a large leakage of consumer spending on "big-ticket" items, such as, cars, appliances, furniture, etc.

TABLE 3

Elko County Sales Patterns of Next Most Likely Towns for Persons Living in the Nearest City to the Mine

County or City	Groceries	Bank	Medical	Major Purchase	Entertainment
	(percentage)				
Elko	100	100			66.7
Washoe			50	33.3	33.3
Salt Lake City			50	33.3	
Twin Falls, ID				33.3	
TOTAL	100	100	100	100	100

n = 6

Table 3 provides a similar breakdown for the "next most likely place of purchase" for the same Elko County respondents. The results are largely the same except for the addition of Washoe County to the table. Another difference can be found in the medical care category. Respondents indicated in interviews that the more routine medical services available within the county generally met their needs. However, often major medical services were sought outside of the area.

TABLE 4

Nye County Sales Patterns for Persons Living in the Nearest City to the Mine

County or City	Groceries	Bank	Medical	Major Purchase	Entertainment
	(percentage)				
Nye	50	83.3	83.3		
Clark	33.3		16.7	50	50
Washoe				50	33.3
Churchill	16.7	16.7			
Bishop, CA					16.7
TOTAL	100	100	100	100	100

n = 6

Tables 4 and 5 show the "most likely place of purchase" and "next most likely" for respondents living in the city closest to the mining site in Nye County. On these tables the effects of large geographic size, small population and, hence, small market size are pronounced. Consumer spending shows much more dispersion than in Elko and Humboldt counties, with leakages to all surrounding Nevada counties and to commercial centers outside of the state. As in the case of Elko County, the "major purchase" category is hardest hit by outside competition, with 100% leaking out

TABLE 5

Nye County Sales Patterns of Next Most Likely Towns for Persons Living in the Nearest City to the Mine

County or City	Groceries	Bank	Medical	Major Purchase	Entertainment
	(percentage)				
Nye	50	33.33			33.33
Lander					
Washoe	25	66.67			33.33
Clark				50	
Carson City				50	
Churchill					
Bishop, CA	25				33.33
St. George, UT					
Mineral					
TOTAL	100	100		100	100

n = 3

of Nye County. The tables indicate that Nye County merchants face serious competition in every expenditure category, explaining why Nye County's multipliers, shown in Table 1 are quite low.

III. Summary and Implications

This description of the state's commercial structure shows four major geographic markets. In the order of their geographic size, these commercial regions are Clark County, Washoe-Carson-Douglas, Humboldt, and Elko. The implications of this structure are significant in terms of the degree of commercial development, or lack thereof, for these regional market centers and for the remaining counties.

The size of the Clark County infrastructure is such that development of export base industries, such as mining, agriculture, and federal projects in Nye and Lincoln counties spillover into Clark. A similar situation exists in the northern part of the state, except that the commercial centers are more dispersed. The spillovers create jobs and generate payrolls in these four major geographic markets and contribute to their local governments' tax base through the sales tax.

While the spillovers are economically beneficial for these major market areas' private and public sectors, they have the opposite implication for the remainder of the state. In fact, outside of the major market areas' respective political jurisdictions, growth and development prospects in these areas are hit doubly by their inability to compete commercially. First, they are unable to develop an infrastructure, and secondly, a substantial portion of their sales tax base is exported. However, perhaps the singularly most important point of this discussion is that this situation should not be viewed as "competitive."

The discussion of spillovers has clearly implied that growth and development at the local level has stimulated growth and *diversification* in the major commercial areas. That is, as growth occurs in localities like Tonopah, Ely, Battle Mountain, etc., the initial impact is largely "spilled-over" into the major market centers. As sufficient market size is achieved, local commercial development can occur and compete with the infrastructure of the major commercial centers. Consequently, this kind of growth in the non-

metropolitan economy is easily viewed as competitive. However, when this local development occurs, it also creates a demand for different goods and services from the major commercial centers, such as wholesale and transportation services, as well as more specialized services, such as agricultural and mining supplies and equipment, banking, insurance, attorneys, education, and entertainment. The demand for these goods and services helps diversify the economies of the major markets by increasing demand in sectors that are least developed. Consequently, the economies of the major markets experience growth in a non-gaming area of their export sector.

Clearly, it can be pointed out that the market size of these non-metropolitan areas is so small that the impact of doubling the population of Nye County, for example, would barely cause a ripple in Las Vegas. This is clearly the case if one looks at *total* economic activity. However, if the objective to be pursued is diversification, the 5,000 new jobs that might be required to double Nye County's population would do Las Vegas more good than 5,000 new casino jobs. This benefit is derived from the fact that 5,000 new Nye County jobs would induce the creation of possibly that many new jobs in the Las Vegas non-gaming export sector. Consequently, although major growth in the non-metropolitan areas is small by the standards of the metropolitan areas, the major benefit to the metropolitan areas from non-metropolitan growth is not the magnitude of that growth but its implications for diversification. To follow through with the above example, doubling Nye County's market size would result in a large increase in Clark County's non-gaming export sector.

The U.S. Bureau of Census has recently provided some interesting food for thought on these issues, with its projections of the U.S. population through the year 2000.[10] Of primary interest to the issues at hand, as we have seen, is the projection that Nevada will be the fastest growing state in the U.S. in the next two decades, with its population increasing from its 1980 level of approximately 800,000 persons to 1.9 million persons in 2000.

This projection clearly implies that the market size requirement for the diversification of the local infrastructure will be met. This is particularly the case to the extent that this increase can be directed to non-metropolitan areas of the state. This would allow these areas to develop an infrastructure that would link to the non-gaming sectors of the metropolitan areas.

Yet, from the perspective of the export-led growth hypothesis, this is getting the "cart before the horse." The implication of the export-led growth model presented above is that growth in the local infrastructure is dependent upon growth in the export sector. Hence, large increases in population must be preceded by expansion of the state's export base and, more precisely, the Census Bureau's projections must be based on some set of assumptions concerning the growth of the state's export base. Indeed, assumptions are made. The assumption is that the migration patterns established in the 1970's will continue into the 1980's and 1990's. However, since these migration patterns have been based on the gaming industry's boom, they are questionable for the reasons given at the outset of this paper. Consequently, it is worth examining the implications of the Census Bureau's projections in light of the basic regional growth model presented above.

The basic premise of the model is that population is a function of employment which, in turn, is a function of the size of the export base. Hence, changes in population are *caused by* changes in employment which, in turn, are *caused by* changes in employment in the export base. Mathematically:

[1] $P = P(E(X))$. Where P = population, E = employment, and X = export base employment. The implication of the employment based population model is that a change in population (dP) will occur in the following manner:

$$[2]\ dP = \frac{\partial P}{\partial E}\, dE\, \frac{\partial E}{\partial X}\, dX.$$

This differential equation provides a useful perspective on the economic and population growth issue because the rate of change in the population size with respect to employment ($\frac{\partial P}{\partial E}$), and the rate of change in employment resulting from a change in the export base ($\frac{\partial E}{\partial X}$) are well defined relationships. In both cases, these relationships can be estimated from actual historical trends. An examination of the ratio of persons per job over time shows that in 1970, for example, there were 2.4 jobs per person in the state. By 1980, this ratio had fallen to 2.0. This is a rather low ratio reflecting a large proportion of single individuals in the state. While prospects for increasing numbers of retired individuals migrating to the state is a strong possibility in the future, and would increase this ratio, it is assumed below for the sake of simplicity that the ratio will remain at its current level of 2.0. In the second case, an estimate of the relationship between the size of the export base and total employment was presented above. That is, $\frac{\partial E}{\partial X}$ is the employment multiplier which had an estimated value of 2.26 over the 1970's.

Using these relationships it is possible to work backwards from the Census population forecasts to derive their implications for growth in employment in the state in total, as well as employment in the export base. However, the issue of diversification and the possible decline in the growth rates of the gaming industry, noted above, suggest a shift in the composition of the export sector as well as aggregate growth. In other words, if we assume that the gaming industry will continue to grow, but at the same average annual rate of growth as the U.S. Gross National Product over the next two decades, say 3%, then the logical question is how fast will the non-gaming export base have to grow in order to achieve the Census projections? An alternative statement of this question is how much will the economy have to diversify to meet these projections?

A rough, but plausible, estimate of the pace of this implied diversification is presented in Table 6, where the implications of the above assumptions are presented. The answer to the question above can be seen on the bottom row of the table which shows non-gaming export base employment growing from 61,800 in 1980 to 137,600 in 1990 for a 106% rate of decennial growth. This figure is no less than staggering and completely outside of experience of the state in the past, where the gaming industry has shouldered the burden of stimulating growth.

TABLE 6

Employment Based Population Model

	1970	Δ	%Δ	1980	Δ	%Δ	1990	Δ	%Δ	2000
POP*	488.7[a]	310.5	63.5	799 2[a]	476.2[e]	59.8[e]	1,275.4[e]	643.4[e]	50.4[e]	1,918.8[e]
EMP (1)	203. [a]	196.6[a]	96.8[a]	399.6[a]	238.1[e]	59.6[e]	637.7[e]	321.7	50.4[e]	959.4[e]
EXPORT (2)	89.8[e]	87.0[a]	96.8[a]	176.8[e]	105.4	59.6[e]	282.2	142.3	50.3[e]	424.5
GAMING (3)	53.2[a]	61.8[a]	116.2[a]	115.0[a]	39.6	34.4	154.6	53.1	34.4	207.7
NON-G	36.6[a]	25.2[a]	68.9[a]	61.8[a]	65.8	106.5	127.6	89.2	69.9	216.8

*U.S. Bureau of Census
a Actual
e Estimate

(1) The assumed population-employment relationship is 2:1 for estimates.

(2) The estimated relationship between the export base and total employment is the multiplier derived above or, Total Employment is 2.26 times export base employment.

(3) For reasons explained in the text, it is assumed that gaming will grow at the annual average national rate of economic growth, i.e., 3%. Hence, $G_{t+1} = (1+.03)^{10} G_t$, $(1.03)^{10} = 1.34$, or 34% over each decade.

(4) Non-gaming Export base employment is computed here as the difference between the export base estimates and the assumed rate of growth in gaming.

There are clearly many ways that the state can diversify its economy, from attracting "high tech" industrial parks, to large scale amusement parks and other schemes to capture a larger share of consumers' entertainment dollars. Finding the best, or most reasonable, source of diversification is, of course, the difficult issue. Many proposals are routinely offered and, sometimes, debated by promoters and politicians. Unfortunately, we have no great revelations or easy answers to offer. However, our analysis has offered two general principles of economics that will help clarify certain points of public discussion.

The first principle of development is specialization in an area of comparative advantage. The second principle is Smith's caveat that development is limited by the extent of the market, or the principle of market size. Together these principles imply that the state should seek to expand its non-gaming export base and its local infrastructures.

In the first instance, export base employment must be derived from some local cost advantage. In the past, gaming, mineral deposits, and location have been the prime movers of the state's economy. The development of new areas of comparative advantage, or taking advantage of untapped resources, is a difficult and sometimes highly political undertaking. The limitation of market size, on the other hand, presents an opportunity to the mutual advantage of the state as a whole. Increasing the market and population of the non-metropolitan areas of Nevada will lead the state in a direction that will promote diversified growth.

Footnotes:

[1]Thomas F. Cargill, "Is the Nevada Economy Recession Proof?" *Nevada Review of Business and Economic Research,* Summer, 1979.

[2]*U.S. News and World Report,* provides a discussion of the gambling explosion, May 30, 1983.

[3]Personal communication with William R. Eadington, Professor of Economics, University of Nevada, Reno concerning some unpublished research.

[4]The export-led growth hypothesis has been applied to both the national economy and regions within the nation. A classic example of its application to regional analysis is D.C. North, "Location Theory and Regional Economic Growth," *Journal of Political Economy,* v. 63, (June, 1955). An example of an application to national economic growth is North's *The Economic Growth of the U.S. 1790-1860.* New York: W. W. Norton and Co., Inc., 1966.

[5]Adam Smith, *The Wealth of Nations,* and George Stigler, "The Division of Labor is Limited by Extent of the Market," *Journal of Political Economy,* v. LIX, no. 3 (June 1951), pp. 185-193.

[6]"The Economic and Fiscal Contributions of the Metal Mining Industry in Ten States," Mountain West Research, Inc., 1980.

[7]*Op. cit.,* p. 7

[8]John L. Dobra, Glen Atkinson, and Robert Barone, "An Analysis of the Economic Impact of the Mining Industry on Nevda's Economy," in *The Nevada Mineral Industry,* 1982, Nevada Bureau of Mines and Geology Special Publication MI - 1982, pp. 21-34.

[9]U.S. Bureau of Census; Bureau of Business and Economic Research, College of Business Administration, University of Nevada, Reno.

[10]U.S. Department of Commerce News, Bureau of Census, September 8, 1983, provides a summary of *Provisional Projections of the States by Age and Sex,* 1980 to 2000, series P-25, no. 937 (GPO Stock No. 003-001-91434-4) U.S. Government Printing Office, Washington, D.C. 20402.

Economic Growth Alternatives for Washoe County in the 1980's

*By William R. Eadington, Clifford McCorkle and Randolph Townsend**

Though population growth in the Truckee Meadows has slowed in the last few years, there are still good reasons to believe that this area may grow to the point that its natural resource base and its general quality of life could be seriously damaged. In order to avoid making commitments in the next few years that could lead to serious problems two or three decades in the future, it is important that local governments, in conjunction with existing planning agencies, establish a system of review for large job-creating projects which will allow policy-makers to consciously manage future poulation growth within acceptable limits.

Such a system, if it is to be workable, would require the following: First, it would have to be acknowledged and understood that much of the future population growth that will occur in this area will be the direct and indirect result of new large "export" industries, those whose products or services generate revenues from outside the Reno-Sparks area. Second, it will be necessary for the various communities involved to agree upon some realistic population limits that can be used for planning purposes. For example, if it is decided that population growth in Washoe County in excess of 350,000 will lead to undesirable increases in environmental, social, resource, or economic costs, then a population growth policy must be adopted that will address this reality. Third, because of the fact that creation of new export industry in either Reno, Sparks, or the unincorporated portions of Washoe County near the existing urban area will have similar population growth implications, it is critical that decisions to allow or not allow new large export industry into the area be coordinated among all three governmental entities.

At this point in time, it is important that policies be established that will allow Washoe County to control the direction of growth and diversification of its economy over the next two decades. In the past, growth has for the most part been allowed to take its own course; those export based firms which were willing and able to locate in the Reno-Sparks area did so, and the resulting population growth that occurred was accommodated by local governments. Such an approach may be unwise in the future if in fact this area does have resource constraints that will eventually come into effect and if policy makers are serious about strengthening and diversifying the area's economic base.

It is possible to establish population growth policies which can be implemented without creating either significant costs for existing government entities or on affected businesses. However, this is the appropriate time to establish the mechanism. If little is done until the area is growing rapidly again, it will be very difficult to establish consensus among the various interests in the communities on an overall policy.

Through the 1960's and 1970's, the greater Reno-Sparks area has been among the fastest growing regions in the United States. Much of the population growth and economic expansion is directly attributable to the growth of the area's gaming and tourism industry, and to a lesser extent to the influence of warehousing and light manufacturing industry. Since 1980, population and economic expansion have slowed, due both to the relatively poor performance of the area's casinos and hotels and motels since 1978, and to the national recessions in 1980 and 1981-82.

In retrospect, the rapid economic and population growth over the past two decades, and especially the experience of the late 1970's, was a mixed blessing to the citizens and the business community of the area. Along with the new jobs, new population, and higher tax base associated with the economic growth of the 1970's came sewer capacity shortages, rapid inflation in the housing sector, noticeable increases in air pollution and water quality degradation, and significant economic hardship on certain sectors of the area's economy, most notably the casino industry and the local motel industry. Furthermore, the rapid population growth taxed the local governments' ability to deliver needed public services, and induced both the local housing construction industry and the Sierra Pacific Power Company to over-expand facilities to meet anticipated demand.

The last two years have provided an opportunity for the citizens of the region to reconsider what the long term growth objectives for Washoe County should be, and how those objectives could be implemented. There has been considerable interest in pursuing economic diversification for the area's economy. The cities of Reno and Sparks have

**William R. Eadington is Professor of Economics, College of Business Administration, University of Nevada, Reno; Clifford McCorkle is a Reno Realtor and former State Senator, and Randolph Townsend is a State Senator from Washoe County.*

considered implementing downtown redevelopment plans that would strengthen the existing downtown economic base and potentially attract new private sector investment into the downtown areas; and various destination resort projects have been proposed in or near the Reno-Sparks area.

Given the likelihood that the present lull in the area's growth is likely to end with the national economic recovery, it is important that the governments of Reno, Sparks and Washoe County accept some fundamental planning principles and truths so that the mistakes of the past can be avoided. Among the most important of these are:

1. The major source of economic and population growth in this region is the expansion of export or basic sector industries, those which produce a product or service for non-area residents, such as gaming and tourism, warehousing, and manufacturing. Businesses which cater primarily to the area's residents, such as shopping centers, new housing, schools, and medical facilities are not a direct source, but rather are a result of population growth.

2. There is a fairly widespread belief that there are limits to the population that this area can reasonably support without significant deterioration in the resource base. If population grows beyond these limits, then it will affect the community in a number of ways, including: more frequent and more severe problems with air and water quality; more frequent problems of water and land availability; higher costs of public services, especially in those areas where resource, environmental, or social deterioration have taken place; and foreclosed options for future growth from that point without risking even greater deterioration in the area's resource base.

3. Expansion of export or basic sector employment tends to increase the population by a multiple of the initial number of jobs created. This is because when a person moves into the area to fill a new export sector job, he or she brings in non-working family members; the resultant population growth increases demand for jobs in the community that serve the local population. Therefore, creation of one new export sector job would have a long term effect on the area's population of about four people, more or less.

4. If the carrying capacity of the region is being approached, then area planners and policy makers must realize that they must limit the number of new export sector jobs created, or accept the consequences of expanding beyond the carrying capacity of the region. If they choose the former, then it is necessary to be able to allocate new export sector jobs in a manner that will best serve the long run interests of the community.

5. Meaningful regional planning cannot take place unless there is a high level of cooperation among all government entities who have the ability to grant approvals for creation of new export sector jobs. This might imply the reconstitution of a truly regional planning agency for the area.

6. It is in the area's long term best economic interests to create an economic, social and political environment which is conducive to attracting diversified industry into the area. Gaming and tourism presently employ over a quarter of those employed in Washoe County; that sector makes up well over half of the area's export sector activities.

7. Rapid population and economic growth can pose two levels of difficulty for the community and for planners and policy makers: first, it can use up some of the potential for future economic and population expansion as it closes in on resource limits; and second, it is far more difficult and expensive to manage a rapidly growing community than one which is progressing at a more moderate rate.

These factors, taken together, suggest a number of policy positions that could be adopted and implemented in the next few years. These could include policies specific to the gaming and tourism industry, to potential diversified industry, to the planning process, and to overall area growth management.

I. Policies toward gaming

The gaming and tourism industry is, and will likely continue to be, the major export activity in the Reno-Sparks area. Policies should be pursued that will enhance the performance and profitability of existing gaming facilities, and point the industry's future evolution in directions that will benefit the region at large. For example, the downtown redevelopment project in Reno would enhance the quality of the gaming experience for potential visitors, and hopefully would improve the general appeal of the Reno area as a destination for tourists who previously have avoided Reno because of its run-down appearance.

On the other hand, it would be unwise to commit the area to significant expansion of the gaming and tourism industry unless it represents significantly different tourism markets than those the area is presently attracting. Given the trends toward the legalization of gaming in other states, and the relatively mediocre performance of casinos throughout Nevada in recent years, it would be unwise to base the population growth potential on more of the same. The area would be increasing its exposure to area-wide economic hardship triggered by a general decline in the gaming industry.

Thus, local and regional policies toward the gaming and tourism industry should attempt to upgrade the quality of the tourist and gaming activities that the area offers, and to pursue policies and strategies which have the potential of broadening the general appeal of the area.

II. Policies toward diversification of industry

In recent years, one of the most popular pursuits of regional planners and policy makers throughout the United States has been to devise strategies to attract "high tech" industry into their respective regions. "High tech" is seen as desirable because of the perceived attributes such industry would have: its top level workforce would be well-educated and highly paid; the industrial activity itself would be non-polluting and generally non-taxing on the area's resources; and there would be various spill-over benefits to the community in the form of improved links between the new industry and the education establishment. "High tech" is seen by others as prestigious, and such industry would promote diversification and, by implication, greater long term

economic stability. How true these perceptions are depends on which high-tech firms or industries one is talking about; some can be quite unstable, resource depleting, and generate mainly low paying jobs. A first lesson in pursuing "high tech" industry is an understanding that not all high tech activity is the same, and some of it may not be desirable in a long term planning sense.

A second lesson that planners and policy makers should acknowledge is that there are other industries besides high tech that have attributes which are quite desirable from the region's economic perspective. Often, the desirability of a particular industry is not obvious until the characteristics of the firm can be examined in detail, say at the point when it is considering locating in the area. This suggests that the appropriate strategy for attracting diversified industry into an area may not be to go out and solicit "high tech" directly, but rather to identify and improve upon those factors that firms consider desirable in their relocation decisions. Thus, the area should try to stabilize its political and economic environment so that potential new firms to the area would be able to plan with reasonable assurance that the policies that were in effect at the beginning of the planning process would remain in effect long after the firm located here. In similar fashion, the state should attempt to stabilize its tax policies so that the threat of significant changes in the state's tax structure is far less likely to occur every two years. Finally, the state and local governments should make long term commitments to important public services, such as education and public agency support, so that potential businesses can plan on the level of complementary public sector services that the area and the state claim to offer at a given point in time.

III. Policies toward the planning process

To the extent that population growth and the region's carrying capacity are important factors in the area's long term economic objectives, the planning process will have to incorporate some set of mechanisms to assure that the region's population, and the rate of growth of population, remain within limits consistent with the area's long term growth plan. Because of the realities listed above, job-induced population growth can be controlled, to some extent, through controlling the creation of new export sector jobs. In order to do this, planning officials and policy makers need to examine the population and growth rate implications of new export sector projects prior to their approval and to determine, on a case by case basis, whether specific projects make the best use of the region's growth potential.

In order to implement this type of policy, two things are necessary. First, there must be enough cooperation among the various governmental jurisdictions in the Reno-Sparks area to bring about a united and consistent growth policy. Second, there must be an accepted methodology among decision making bodies on how the creation of export sector jobs translates into potential population growth. As suggested above, the need for cooperation and coordination implies the necessity of centralizing at least part of the regional planning process. The information needed to measure the link between job creation and population growth impacts can, for the most part, be extracted from information provided through the Major Projects Review process.

Assuming that these issues are adequately resolved, a planning process could be implemented in the following fashion. Using the best available information, planners could estimate the region's carrying capacity at some future date. For the sake of illustration, let us assume this population level to be 350,000. Policy makers would then need to decide what portion of that potential should be used up over the next, say, twenty years. Supose they decided 67%. If the current population is 200,000, then policy makers would accept as a policy objective the proposal that the region's population should not be allowed to grow beyond 300,000 within a twenty year period.

The next part of the planning process would be to allocate the growth potential for the twenty year period over shorter time frames. For example, if policy makers have agreed to population targets of an increase of 100,000 over 20 years, they might next agree to allow increases of 25,000 for each five year period. Thus, for the next five years, regional planning decisions that deal with the creation of export sector jobs, whether in gaming or in other industry, would have to take into account the "quota" of export sector jobs that can be created and still remain consistent with the region's growth objectives. If it is established, for example, that a new major project will create 2,500 jobs, and that these are all export sector jobs, and that the population impact of each export sector job is four people, then the approval of this project would use up 40% of the area's population growth potential for that five year period.

If such a system were to be adopted and implemented, there would be a number of advantages associated with it. First, policy makers would be more aware of the growth implications of their decisions. Instead of evaluating projects on whether they are good or bad, there would be more of a tendency to evaluate them on how good they would be for the region over the long term. Second, policy makers would become more aware of the trade-offs involved in granting approvals to marginal or mediocre projects. If the base of export sector jobs is depleted early, it will be much harder to justify later projects which may in fact be far more desirable.

This system would also have considerable flexibility. Because of the difficulties of estimating the area's population carrying capacity, the long term targets could be reevaluated, say, every five years. At that time, the comparison with past targets and actual experience could also be evaluated, and new guidelines could be drawn up for the next five year block. Finally, if within a given time frame, policy makers decide it is worthwhile to commit to projects that would overshoot the targets, then they would have to provide considerable justification for effectively "taking from the future" to do so.

The strength of such a mechanism is that it minimizes the types of projects that come under this kind of scrutiny. For example, projects whose purpose is to serve the needs of the local population, such as shopping centers, medical

buildings, housing developments, or most office buildings, would not need to be examined for potential growth effects, because this kind of economic expansion is a result of earlier export sector expansion. Also, if planning efforts were aimed only at those major projects which were likely to create some predetermined number of jobs, say 250 or more, then the number of projects which would need to be reviewed by planners and policy makers would be relatively small. Population growth induced by new small businesses, by expansion of existing businesses, or which occurs because of non-economic factors (i.e., births and deaths) could be factored into the population projections.

IV. Conclusion: Growth management and the future of Washoe County

Most of the residents of this area would agree with the desirability of preserving many of the positive attributes that exist in the Reno-Sparks area. Among these are the area's natural environment and its relatively healthy economic environment. However, many people are aware that there may be trade-offs between these two factors, and that poorly managed economic growth could significantly and adversely affect this area's overall quality of life.

On the other hand, a rational growth management plan, if implemented now or in the near future, can attempt to anticipate some of the pitfalls that have resulted in often irreversible problems in other regions of the country, and ensure that they do not happen here. The structure described above is one way such a growth management plan could be implemented. However, it is presented here more as an illustration than as a blueprint. Hopefully, those individuals who are concerned about the long term health of this area, from both the economic and the quality of life perspective, should give considerable thought to the issues discussed here.

The energy crisis may not be over, says Exxon Chairman

BOSTON — Could the energy crisis of ten years ago happen again? Probably not today, but prospects for the future remain uncertain, predicts Clifton C. Garvin, Jr., Chairman of Exxon Corporation, in the Fall 1983 issue of *The Journal of Business Strategy*.

Despite the oil discoveries of the past decade, writes Garvin in his article, "The Energy Crisis: Full Circle?" the world has been consuming more oil than it has been finding. Huge low cost supplies that were once abundant in the Middle East have become scarcer. Now, the best prospects are located in hostile environments — areas such as the Arctic and deep off-shore waters. Garvin further states that OPEC's control of the world oil supply, although weakened by the current recession, could possibly grow stronger as the economy turns around. And, the possibility of a major upset in the Middle East could curtail all oil supplies. All of these factors lead Garvin to believe that "it would be unwise to assume that the energy problem has therefore gone away."

In the same issue of *The Journal of Business Strategy*, John F. Welch, Jr., Chairman and Chief Executive Officer of General Electric Company, calls for the pressing need for a "quality recovery."

"We want a quality recovery," urges Welch in his article, "World Competitiveness: The Practical Test of U.S. Economic Policy," "fueled by high investment, which will lead to high productivity and high growth in real incomes; a recovery that results in a United States more competitive than the one we know today."

The key to this is to develop an economic policy that is marked by competitiveness — domestic and worldwide. Only by improving the underlying competitive position of U.S. industry, says Welch, can this country hope for a quality, sustained economic recovery.

The Journal of Business Strategy, a quarterly publication devoted to the field of business strategy and strategic planning, is published by Warren, Gorham & Lamont, Inc., Boston, MA.

The Hidden Costs of Nonoptimal Collective Bargaining: The Public Sector in Right-to-Work States

*By Bruce Kieler**

Introduction

Collective bargaining in the public sector of the U.S. economy is increasing at a rapid pace and its importance cannot be denied. Management opposition to collective bargaining has also increased. Until now, the Industrial Relations literature has been focused primarily on collective bargaining in the private sector. Indeed, most of the state laws covering public sector collective bargaining have been modeled after the numerous statutes and judicial precedents governing private sector collective bargaining. The public sector collective bargaining laws in right-to-work states, such as Nevada, are generally viewed as weak, vague, and anti-labor, and in spite of the legal and judicial rules, regulations, guides, and procedures, public sector collective bargaining can result in a less than optimal contract or in an impasse, each of which has obvious as well as hidden monetary, efficiency, and social costs. A less than optimal contract or an impasse is especially likely to occur when the agency's management offers high resistance during the process of collective bargaining. Such a less than optimal contract or an impasse can lead to greater than normal costs for the agency, namely, increasing turnover rates, decreasing employee job commitment, decreasing efficiency and productivity, a malfunctioning of the agency's internal labor market, the loss of valuable human capital, and possibly higher total labor costs as well.

The "General Model" offered in this paper is an attempt to determine the sequence of events in the public sector bargaining process, the likely range of management reaction, and the possible outcomes of the process. The causal strength of the Background Factors is hypothesized to be less than that of Management Beliefs/etc., especially in cases where management reaction/resistance to (assumed reasonable) collective bargaining proposals deviates significantly from the optimal level of resistance. The outcomes of the collective bargaining process are seen as a continuum with a range of values from optimal to non-optimal and based on the net cost/benefit to society.

**Bruce Kieler is a doctoral student in Organizational Behavior and Industrial Relations at the Graduate School of Business Administration, University of California, Berkeley.*

The focus of this theoretical exercise is on a small part of the entire process of bargaining, namely, the impact of management resistance to the collective bargaining proposals of the employees in a public sector agency. The hypothesized relationship between constructive negotiations and the ultimate cost to the agency and society of the outcome is reflected in Figure 1. A proposed Cost/Resistance Curve is provided in Figure 2 and the implications of various levels of management resistance to bargaining proposals are noted. An elaboration and analysis of the various levels of resistance possible and their significance for an agency should shed light on the entire structure of collective bargaining in the public sector and on public policy (laws) toward collective bargaining, both of which might need to be changed in order to attain an optimal utilization of the resources (including human resources) available to the public sector. Efficient utilization of these resources is in the public interest, primarily because of its impact on taxes, employee productivity, and aggregate social and human capital.

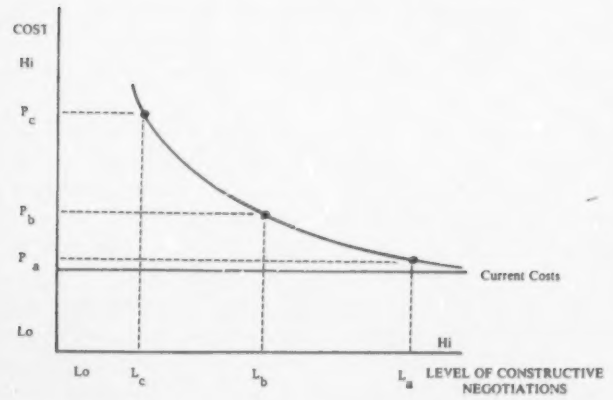
Eventually, the hypotheses to be developed and tested and the conclusions to be derived may have much broader applicability and significance for evaluating utilization of resources in the public sector and public policy toward collective bargaining in public sector agencies. For now, though, only theorized implications will be provided.[1]

The Research Question

The questions underlying this study are as follows: What is the benefit to the society of prolonged or high management resistance to the bargaining proposals submitted by the employees in a public sector agency? Does the level of management resistance to the proposals influence the costs faced by the agency after the conclusion of negotiations? From the standpoint of optimality, would a lower level of resistance lead to a more beneficial outcome for the agency than would a higher level of resistance? What is the relationship between a theorized Cost/Resistance Curve and a Pareto Optimal Condition? At what point can one define the level of management resistance as being efficient, appropriate, or optimal?

Figure 1

Cost/Level of Constructive Negotiations



Commentary:

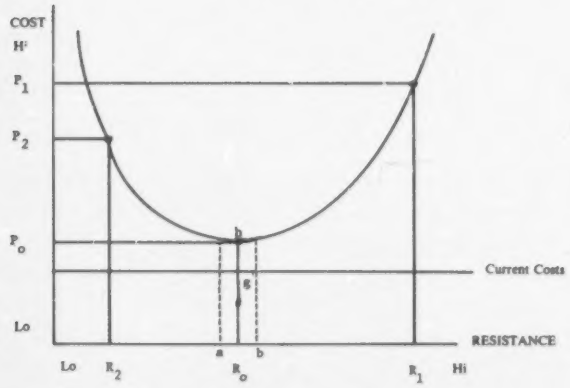
At a, there is a high level of constructive negotiations and settlement of a contract is possible at a price of P_a.

At b, there is a lower level of constructive negotiations occurring and the price of settlement increases.

At c, there is a virtual failure of collective bargaining with an impasse highly likely. The price for settlement at this point, or of concluding the round of negotiations with an impasse, is P_c.

Figure 2

Cost/Resistance Curve



Commentary:

The optimal situation is P_oR_o. If $R_1 \blacktriangleright R_o$, then $P_1 \blacktriangleright P_o$. If $R_2 \blacktriangleleft R_o$, then $P_2 \blacktriangleright P_o$. $\overline{ab}$ is the range of R possible which is appropriate to the process of good-faith collective bargaining. $\overline{gh}$ is the change in P which would result in an optimal settlement cost.

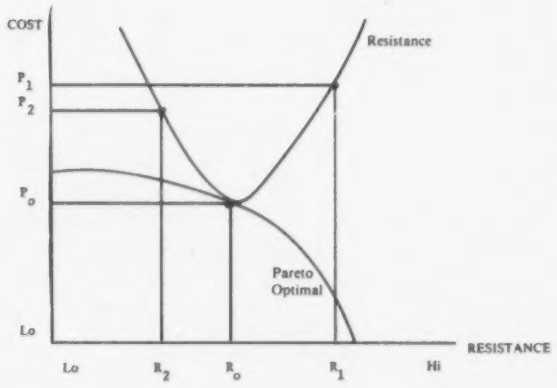
It is better for the agency and society for the two parties to settle at the point P_oR_o. Any settlement above it, but falling within the $\overline{ab}$ range would indicate that management has been more accommodating than necessary, possibly for cultivating good/cooperative relations with the employees, or for buying labor peace.

Identification of the Variables

In this study, the impact of various levels of management resistance to the collective bargaining proposals of the employees will be postulated by means of examining the relationship between a Cost/Resistance Curve and a generalized Pareto Optimal Condition for the agency as noted in Figure 3. The impact of resistance will be equated to the costs incurred by the agency as a result of concluding a contract with the employees, or of not concluding a contract, that is, of reaching an impasse which is subsequently not resolved to the satisfaction of the employees. The costs to be examined include both the obvious costs and the hidden costs. The obvious costs are the increments in total cost of labor (wages + benefits + other fringes) from year A to succeeding years, while the hidden costs are the cost to the agency of non-beneficial changes in the functioning of the agency's internal labor market (system of promotions and training), the cost to the agency of non-beneficial changes in employee morale, commitment to the organization, and productivity, and the cost to the agency of organizational restructuring meant to institutionalize a continuing adversarial (hostile) relationship with employees.

Figure 3

Cost/Resistance Curve & a Pareto Optimality



Commentary:

R_o will lead to an optimal settlement at P_o.
R_1 will lead to a non-optimal settlement at P_1.
R_2 will lead to a non-optimal settlement at P_2.

It is important to examine both the obvious costs and the hidden costs because noting only the obvious costs could lead to the false conclusion that management, by offering high resistance, has saved the agency money which would otherwise have had to be paid to the employees. Some managements incorrectly believe that a non-unionized work environment is less costly, or more productive, than a unionized one. On the contrary, a non-unionized workforce can be even more costly, especially if management, for whatever reason, opts to thwart the advent of unionism by offering higher and higher pay to the employees, that is, by buying the employees away from a union. Paying labor more than its marginal product should be viewed as an inefficient (non-optimal) utilization of resources and should be minimized, if possible.

The functioning of the agency's internal labor market [3], i.e., the system of promotions and advanced training available to employees, is part of this study because it appears that an anti-union management could attempt to thwart or punish the employees and their union by withholding promotions and training from the employees. Any of these actions could lead to a higher than normal turnover rate and the replacement of skilled employees by new recruits who lack the valuable agency - specific training of the employees they are replacing [2, 6]. To do this is not without considerable cost to the agency, especially when the efficiency of the agency is considered.

If the concensus among the employees of the agency is pro-union, an attempt by management to thwart their earnest hopes and wishes could lead to a decline in on-the-job morale, commitment, satisfaction, and productivity [10,7]. A decline in productivity would have to be considered as an additional cost to the agency.

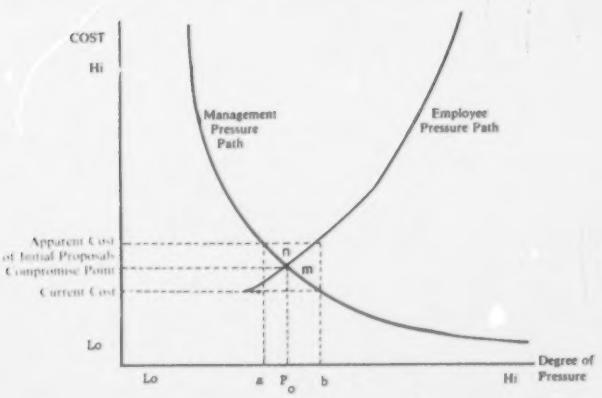
Finally, any changes in the organizational structure of the agency which are meant to continue or to increase the level of hostility in the management/employee relationship would also have to be considered an added cost to the agency. This would include such actions by the management as changes in the handling of personnel matters, stricter enforcement of rules and regulations, an increase in the number of such rules and regulations governing employee behavior, the use of reprimands to harass pro-union employees, and the encouragement and financial support for the development of a pro-management employees' association which would compete with the union for support among the employees.

If the sum of all the costs (both obvious and hidden) to the agency resulting from its management's resistance to the bargaining proposals of the employees is greater than the sum of all the costs which would have occurred from attempting to reach a Pareto-optimal settlement of a union contract [8], then management has erred in its judgment, has wasted scarce resources, both monetary and human, and has been negligent in fulfilling its duty to provide efficient management for the agency. It is hypothesized that high resistance can never lead to a Pareto optimal condition, and might be indicative of union-busting or attempted union-busting.

For management's resistance to the bargaining proposals of the employees to be efficient, it must be at a level such that a move to a Pareto-optimal condition is attempted or is at least not precluded. This implies that management is cognizant of both the obvious and the hidden costs involved in resisting the employees' bargaining proposals and that it then acts responsibly and in the interest of efficiency; i.e., it engages in constructive collective bargaining.

Figure 4

Employee/Management Pressure Paths



Commentary:

The greater the pressure (resistance) of management, the lower the cost of settlement. This is the usual management view, but this study proposes that the Cost/Resistance Curve is curvilinear.

The greater the pressure of the employees (through solidarity, demonstrations, and questioning of authority), the higher will be the resulting settlement benefit to the employees. This is the usual view held by employees, but increased employee pressure is usually met by increased management resistance.

Segment $\overline{ab}$ is the range of management resistance which is conducive to the success of the bargaining process.

Segment m indicates that management is more inclined to offer more resistance than is necessary for the optimal settlement, possibly because the collective bargaining process as developed in the U.S.A. encourages inflated initial employee demands. Segment n indicates that the employees are more inclined to exert more pressure than is necessary to achieve their bottom line goals during the bargaining process.

Definition of the Variables

The *Independent Variable* is defined as the level of resistance offered by management to the collective bargaining proposals of the employees. The proposals submitted by the employees are assumed to be reasonable. Resistance is classified as *no resistance* (that is, management collaborates with the employees), *low resistance, optimal resistance,* and *high resistance.* These classifications are to be determined by noting the following:

a. the characteristics of the management group (attitudes, training, experience or no experience in negotiating with employees).

b. the use of outside assistance (hiring an Employers' Association negotiator);

c. the amount of managerial and staff time utilized in response to the unionization of the employees and the onset of bargaining (a little/a lot);

d. management's attitude toward and treatment of the employees in the bargaining unit (fair/unfair, cordial/hostile);

e. management's treatment of the employee representatives at the bargaining sessions (such as paid time off in order to attend the sessions/no paid time off);

f. the appropriateness of management's response to the unionization of the employees and/or to their bargaining proposals;

g. the tactics used by management at the bargaining table (delays, cancellation of meetings, failure to provide adequate and timely response to employee proposals and counter proposals);

h. the length of time required to reach a tentative contract, or impasse;

i. the atmosphere prevailing at the bargaining table; and,

j. the necessity of resorting to impasse procedures.

Additionally, other management actions taken during the period of collective bargaining (such as organizational restructuring, suspension of a Merit Pay System, arbitrary shift changes made without regard for seniority, and increased issuance of reprimands to employees) could be viewed as pressure on employees and, therefore, part of management's resistance to the bargaining proposals. It should be noted that sufficient and adequate management resistance to employees' proposals is expected and required for the efficient functioning of the collective bargaining process, but the use of high resistance is neither appropriate nor optimal. As previously noted, high resistance might be indicative of attempted union-busting by management.

The *Dependent Variable* is defined as the total monetary, efficiency, and social/human capital cost of the contract or of impasse. This cost would include the following:

a. the change in the total cost of labor (wages, benefits, and other fringes);

b. the cost involved in non-beneficial changes in the functioning of the agency's internal labor market (such as recruiting outside the agency to staff positions which could have been staffed by internal promotions);

c. the cost resulting from any decrease in employee morale, commitment, and productivity (as indicated by absences, turnover, grievances, reprimands, performance evaluations, and eligibility decisions for merit raises); and

d. the cost to the agency of any organizational changes necessitated by the emergence of a unionized work environment, or of an impasse environment, and meant to continue the adversarial relationship existing between management and the employees at the time.

These costs may or may not be offset by benefits to the organization in the way of greater efficiencies resulting from organizational restructuring and in the recruitment of a new and possibly less combative workforce. This would depend upon the degree of utilization of these changes by the management and on the employees' reaction to them.

Statement of the Theory

It is theorized that the cost to a public sector agency resulting from high management resistance to the reasonable collective bargaining proposals submitted by the employees is greater than the cost to the agency resulting from an optimal level of resistance to the proposals. This cost then, other things being equal, is a function of the level of resistance offered by the management. Figure 4 illustrates the cost-resistance relationship[2] usually expected by management, and Figure 3 illustrates the relationship of resistance and cost theorized in this paper. Since it is highly unlikely that the management would collaborate with the employees or otherwise offer low resistance during collective bargaining, the area of the curve to the left of the local minimum of the Cost/Resistance Curve (Figure 3) will be given only slight consideration.

Symbolically, this theory is written as follows:

$$P_1 \blacktriangleright P_O = f(R),$$

where P_1 = the cost to the agency resulting from a high level of resistance to the otherwise reasonable bargaining proposals of the employees; P_O = the Pareto optimal cost to the agency resulting from an optimal level of resistance; and f(R) = the level of resistance. The elements comprising P include the increment in total labor cost + the cost due to non-beneficial changes in the functioning of the agency's internal labor market + the cost due to non-beneficial changes in employee morale, commitment, and productivity + the cost due to organizational restructuring.

If indeed P_1 is greater than P_O, as theorized in Figure 3, then one must conclude that management, by its use of high resistance to the reasonable bargaining proposals of the employees, has inefficiently utilized human and other resources of the agency and that society as a whole has been harmed. If this were to happen on a widespread basis, then the state laws governing public sector collective bargaining would, of necessity, have to be viewed as insufficient for the task of ensuring adequate procedures to safeguard the public interest.

Hypotheses to Be Tested

Preliminary hypotheses to be tested include the following:

a. In the public sector, high management resistance to reasonable bargaining proposals may result in greater costs to the agency than are optimal.

b. The more moderate and appropriate the resistance, the closer to a Pareto Optimum will be the resulting costs to the agency.

c. During bargaining, if the employees begin to perceive that the management is offering high resistance to their reasonable proposals, then employee morale, commitment, and productivity may decline, turnover may increase, and the subsequent costs to the agency may be non-Pareto optimal.

Expected Changes in the Dependent Variable

If we now examine the theorized relationship between a Cost/Resistance Curve and a generalized Pareto Optimal Condition for the public sector agency, it becomes obvious that the level of management resistance to the reasonable bargaining proposals of the employees will affect costs, other things being equal, in the following ways:

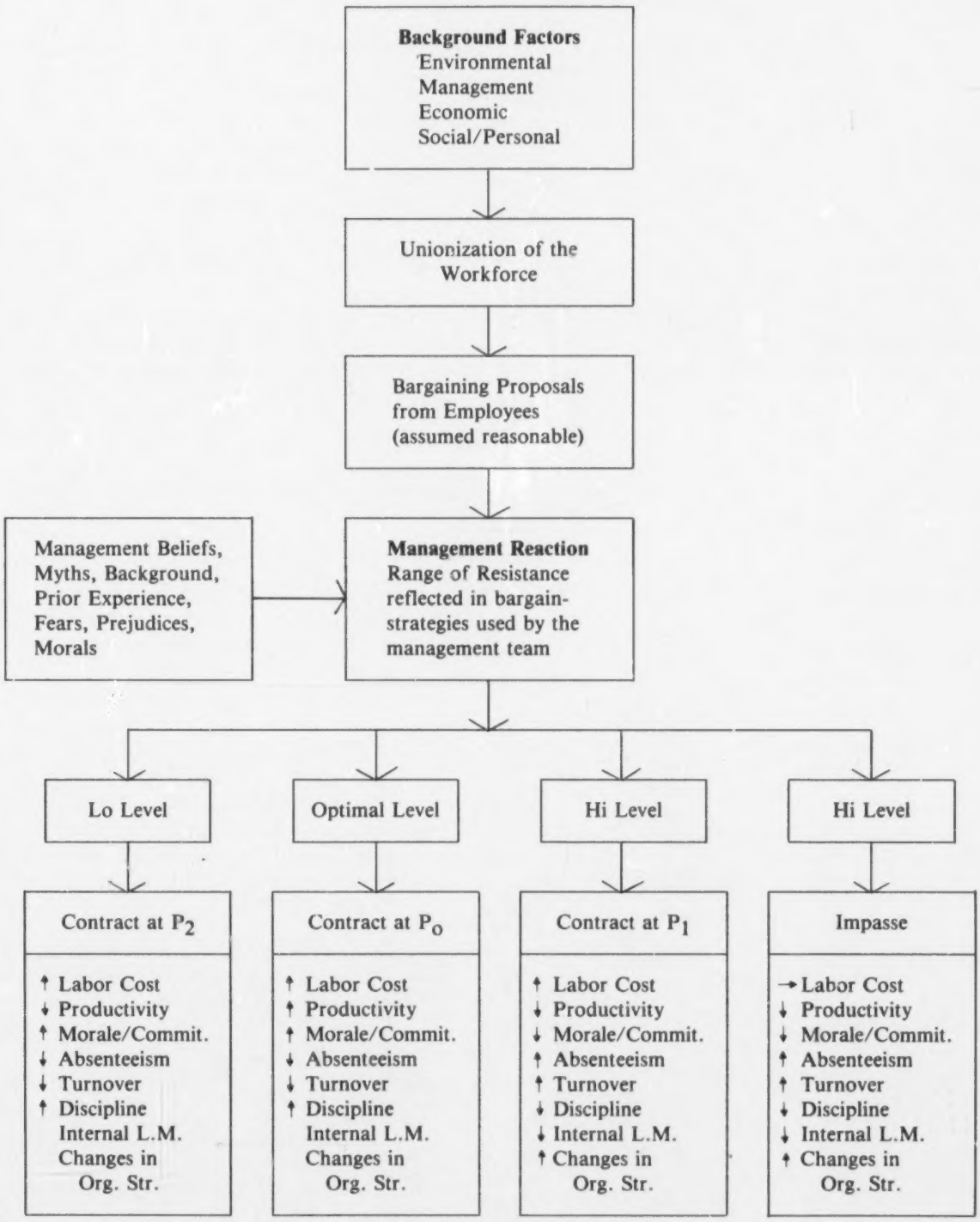
a. *No Resistance* will lead to a non-Pareto optimal change in cost.

b. *Low Resistance* will lead to a non-Pareto optimal change in cost.

c. *Appropriate Resistance* will lead to a Pareto optimal change in cost.

Figure 5

A Generalized Model of Public Sector Collective Bargaining and the Impact of Various Levels of Management Resistance to Employee Bargaining Proposals



d. *High Resistance* will lead to a non-Pareto optimal change in cost.

As illustrated in Figure 3, high resistance to reasonable bargaining proposals does not lead to a Pareto optimal cost, but rather leads to an inefficient and wasteful utilization of public resources.

Testing this theory would probably best be accomplished by a survey of public sector agencies in right-to-work states which have recently become unionized and which are undergoing their first round of collective bargaining negotiations, or which have recently completed their first round of negotiations.

Conclusions and Implications

Although the hypotheses relevant to the theory stated here are still being developed, their thrust is evident: namely, that an inappropriate level of resistance by management to the reasonable collective bargaining proposals submitted by the employees will necessarily lead to non-Pareto optimal cost changes for the agency. These costs constitute an inefficient utilization of public sector resources.

If the process of public sector collective bargaining does not lead to an efficient utilization of resources, then possibly the state laws governing the process are to blame. If this be the case, then the public interest would demand that they be changed to include such procedures as mandatory binding factfinding and/or mandatory binding conciliation/arbitration of all economic issues.

The implications from a social and human capital perspective tend to underscore the potential for considerable loss of efficiency within the agency and a loss to society in the form of an erosion of the aggregate social and human capital investment. Talented employees who perceive unfair or unjust treatment would leave the agency. Additionally, the potential exists for discrimination against one group of employees or another, particularly in hiring, promotions, and pay. Employees disadvantaged by the resistance strategy/tactics adopted by management in reaction to the employees' bargaining proposals could suffer a definite loss of current income and future income opportunities, loss of promotional opportunities, and an increase in job-related stress and anxiety. These could and probably would have a serious negative effect on employee motivation and productivity. Were this to happen, individuals affected would suffer along with the agency. Figure 5 summarizes the model presented in this paper.

Two final implications focus on the absence of the strike threat possibility and the need for greater truth and accuracy in the initial bargaining proposals submitted by the employees. It would appear that the absence of the strike threat possibility weakens the bargaining position and power of the employees in the public sector. To strengthen their bargaining power and to help promote settlement at optimal levels, state governments should consider requiring binding factfinding, conciliation and arbitration of all economic issues. Additionally, there is a need for more truth and accuracy in the bargaining proposals submitted by the employees prior to the beginning of negotiations. A deflation in initial proposals would be an indication of reasonableness of demands and seriousness of intent to negotiate. This would probably promote constructive negotiations. Such an alteration in the style and process of collective bargaining might mean a movement to a European style of negotiations where labor, management, and government confer and decide what level of change in contract terms would be acceptable to the employees, feasible for management, and beneficial to the country/state. In the examples of Austria and Sweden, such a process has led to periods of sustained economic growth and prosperity.

Footnotes:

[1]This paper draws on ideas, concepts, and theories from a variety of sources. These include Hicks' *The Theory of Wages* (1963), especially Chapter VII: The Theory of Industrial Disputes; Pigou's *The Economics of Welfare* (1950); Becker's *Human Capital* (1975) and Mincer's *Schooling, Experience, and Earnings* (1974); Doeringer and Piore's *Internal Labor Markets and Manpower Analysis* (1971); Pareto's *Cours d'economie politique* (via Pigou); Reynolds' *Labor Economics and Labor Relations* (1978); Freeman's *Labor Economics* (1975); Aaron, *et al's Public-Sector Bargaining* (1979); Pfeffer's *Power in Organizations* (1981); and Staw and Salancik's *New Directions in Organizational Behavior* (1977). It also draws on personal experience in organizaing bargaining units in the public sector and on discussions which took place in classes at University of California, Berkeley in Labor Economics (as taught by Clair Brown and Lloyd Ulman), Collective Bargaining (Joe Garbarino), Personnel Administration (George Strauss), Compensation Management (David Estenson), Organizational Behavior (John Freeman and Barry Staw), and Labor Relations (Jonathan Leonard).

[2]Hickian model [5] p. 143.

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Nevada Economic Indicators

Statewide Statistical Data

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
Total Labor Force (000's)	496.8†	502.2†	502.0	500.3	+ 2.4	+ 3.1
Total Employment (000's)	447.2†	454.3†	456.7	452.7	+ 5.2	+ 3.5
Unemployment (000's)	49.6†	47.9†	45.3	47.6	– 18.7	– .8
Unemployment Rate	10.0†	9.5†	9.0	9.5	– 20.8	– 4.0
Unemployment Rate (Seasonally Adjusted)	10.2†	9.9†	9.1	9.7	– 12.0	– 3.9
Agricultural Empl. (000's)	5.1†	5.4†	6.2	5.6	+ 49.1	+ 1.2
Establishment Based Industrial Employment						
Total All Industries (000's)	409.8†	412.4†	414.6	412.3	+ 2.8	+ 1.7
Mining	6.0†	6.0†	6.2	6.1	+ 2.2	– 12.9
Contract Construction	20.1†	21.1†	22.0	21.1	+ 9.9	+ .8
Manufacturing	18.4†	18.5†	18.7	18.5	+ 2.4	– 2.6
Transportation & Utilities						
Transportation	12.3†	12.4†	12.5	12.4	+ 0.0	– 4.4
Railroads	1.8†	1.8†	1.8	1.8	+ 0.0	+ 0.0
Air	2.6†	2.7†	2.6	2.6	+ 2.6	– 11.2
Public Utilities	11.6†	11.4†	11.5	11.5	– 1.4	– 4.4
Total Trade	81.3†	82.5†	83.4	82.4	+ 3.0	+ 2.4
Wholesale Trade	13.8†	13.9†	13.9	13.8	+ 2.0	– .5
Retail Trade	67.5†	68.7†	69.5	68.6	+ 3.2	+ 3.1
Finance, Ins., Real Estate	18.1†	18.2†	18.2	18.2	+ 1.1	+ .4
Service Industries	183.0†	183.1†	184.7	183.6	+ 3.4	+ 4.2
Hotels, Amusement and Recreation Combined	121.2†	121.7†	122.9	121.9	+ 5.4	+ 5.3
Medical and Health	15.5†	15.0†	15.1	15.2	+ 3.2	– 1.3
Total Government	59.0†	59.2†	57.4	58.5	+ 0.2	– .5
Federal	9.5†	9.7†	9.8	9.7	+ 2.1	+ 1.0
State and Local	49.5†	49.5†	47.6	48.9	– .1	– .7
Education	21.0†	21.2†	19.1	20.4	– .2	– .3
Average Weekly Earnings in Selected Industries						
Mining	504.05†	509.58†	519.93	511.19	+ 4.0	+ 6.4
Construction	600.03†	586.17†	619.38	601.86	+ 1.1	+ 3.0
Manufacturing	351.66†	346.09†	341.33	346.36	+ 3.0	+ 7.1
Public Utilities	460.18†	465.20†	460.40	461.93	+ .6	+ 9.4
Trade	266.45†	256.95†	270.73	264.71	+ 2.1	+ 3.2
Average Weekly Hours in Selected Industries						
Mining	42.5†	42.5†	43.4	42.8	+ 2.3	+ 3.0
Construction	35.4†	35.1†	36.2	35.6	+ 1.6	– .8
Manufacturing	38.9†	38.2†	37.8	38.3	+ 1.3	+ 2.1
Public Utilities	39.5†	40.0†	40.0	39.8	– .8	+ .9
Trade	33.9†	33.5†	34.4	33.9	+ 1.2	+ .2
Average Hourly Earnings in Selected Industries						
Mining	11.86†	11.99†	11.98	11.94	+ 1.6	+ 3.3
Construction	16.95†	16.70†	17.11	16.92	– .5	+ 3.1
Manufacturing	9.04†	9.06†	9.03	9.04	+ 1.7	+ 2.7
Public Utilities	11.65†	11.63†	11.51	11.60	+ 1.4	+ 8.9
Trade	7.86†	7.67†	7.87	7.80	+ .9	+ 3.1
Construction Activity						
Residential ($000's)	85,200	108,100	91,600	284,900	+ 29.9	+ 71.6
Nonresidential ($000's)	12,600	13,400	105,100	131,100	+ 122.2	+ 87.3
Nonbuilding ($000's)	10,800	6,300	13,700	30,800	+ 5.8	– 51.5
Total ($000's)	108,500	127,700	210,300	446,500	+ 45.3	+ 49.1
# of New Dwelling Units	2,149	1,257	2,052	5,458	+ 45.6	+ 137.4
Banking Activities ($000,000's)						
Loans	2,100	2,053	2,120	2,091	– 4.4	– 1.4
Investments	742	777	787	768	+ 18.4	+ 15.5
Total Deposits	3,185	3,204	3,299	3,229	+ .9	+ 7.0
Demand Deposits	915	912	933	920	+ 1.4	– 1.1
Time & Savings Deposits	2,266	2,287	2,359	2,304	+ .6	+ 10.6

Statewide Statistical Data (Continued)

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
Tax Collections ($)						
Liquor	1,119,342	989,769	1,262,562	3,371,673	+ 37.9	+ 2.7
Cigarette	1,021,394	982,559	1,601,200	3,605,153	+ 22.4	+ 12.7
Fuel	3,697,194	3,336,586	3,733.121	10,766,901	+ 11.3	+ 13.4
Taxable Sales ($000's)	–	–	–	1,722,072	+ 15.4	+ 3.5
Gaming Revenues ($000's)	–	–	–	703,893	+ 7.6	+ 5.8
Highway Traffic Flow						
17 Selected Stations (Avg. Daily)	99,555	109,352	130,359	113,088	+ 32.5	+ 3.7

† Revised.

Las Vegas Standard Metropolitan Statistical Area

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
Total Labor Force (000's)	278.6†	283.1†	282.4	281.4	+ 2.4	+ 4.1
Total Employment (000's)	250.3†	255.2†	255.4	253.6	+ 4.9	+ 5.3
Unemployment (000's)	28.3†	27.8†	27.0	27.7	– 97.4	– 5.4
Unemployment Rate	10.2†	9.8†	9.6	9.9	– 18.0	– 8.9
Unemployment Rate (Seasonally Adjusted)	10.4†	10.1†	9.2	9.9	– 16.8	– 9.2
Agricultural Employment (000's)	.9†	.9†	1.1	1.0	+ 52.6	+ 0.0
Establishment Based						
Industrial Employment						
Total All Industries (000's)	232.6†	233.3†	233.6	233.2	+ 2.3	+ 3.4
Mining	.4†	.4†	.4	.4	+ 0.0	– 29.4
Contract Construction	12.3†	12.7†	13.1	12.7	+ 6.7	+ 3.0
Manufacturing	6.7†	6.8†	6.9	6.8	+ 3.0	+ 2.5
Transportation & Utilities						
Transportation	7.4†	7.5†	7.5	7.5	– .4	– 4.3
Railroads	.7†	.7†	.7	.7	+ 0.0	+ 0.0
Air	2.1†	2.1†	2.1	2.1	+ 5.0	– 12.5
Public Utilities	6.1†	5.9†	6.0	6.0	– 1.1	– 1.6
Total Trade	46.5†	47.2†	47.4	47.0	+ 2.6	+ 2.7
Wholesale Trade	6.5†	6.5†	6.5	6.5	+ 2.6	+ 1.0
Retail Trade	40.0†	40.7†	40.9	40.5	+ 2.6	+ 3.0
Finance, Ins., Real Estate	10.4†	10.4†	10.5	10.4	+ 1.3	+ 2.0
Service Industries	115.0†	114.5†	114.6	114.7	+ 2.5	+ 6.0
Hotels, Gaming & Recreation	76.9†	76.6†	76.7	76.7	+ 4.3	+ 7.9
Total Government	27.8†	27.9†	27.2	27.6	+ .5	– 1.0
Federal	4.9†	5.0†	5.0	5.0	+ 1.4	+ .7
State and Local	22.9†	22.9†	22.2	22.7	+ .3	– 1.3
Education	10.3†	10.4†	9.4	10.0	+ 0.0	– 2.3
Construction Activity						
Las Vegas						
Residential ($000's)	11,248	11,626	12,649	35,523	+ 18.4	+ 247.2
Nonresidential ($000's)	5,768	5,591	6,116	17,475	– 27.6	– 4.1
Total Value ($000's)	17,016	17,217	18,765	52,998	– 2.1	+ 86.3
# of New Family Units	310	398	333	1,041	+ 146.7	+ 303.5
North Las Vegas						
Residential ($000's)	667	2,199	2,958	5,824	+ 99.5	+ 61.3
Nonresidential ($000's)	991	238	1,000	2,229	+ 64.1	– 74.5
Total Value ($000's)	1,658	2,436	3,958	8,052	+ 88.2	– 34.8
# of Permits	82	80	99	261	+ 56.3	+ 24.9
Energy Consumption						
Sales (000's KWH)	334,210	410,474	567,794	1,312,478	+ 6.3	– 1.6
# of Customers	207,004	207,799	208,844	207,882	+ 1.2	+ 3.1
Taxable Sales ($000's)	–	–	–	955,168	+ 11.6	+ 4.1
Gaming Revenues ($000's)	–	–	–	466,768	+ 1.2	+ 5.4
Air Transportation-McCarran						
Passengers (Arr. & Depart.)	915,580	908,464	865,863	2,689,907	+ 4.7	+ 13.8
Cargo Enplaned (lbs.)	1,179,395	1,058,940	974,379	3,212,714	+ 17.5	+ 30.7
Cargo Deplaned (lbs.)	1,992,517	1,726,304	1,576,752	5,295,573	+ 13.2	+ 13.5
Highway Traffic Flow						
4 Selected Stations (Avg. Daily)	30,090	31,141	33,817	31,682	+ 19.5	+ .9
Room Tax ($)						
Clark County	1,374,149	1,694,929	1,626,129	4,695,207	+ 9.2	+ 16.0
Las Vegas City	225,039	257,758	269,427	752,224	+ 8.4	+ 5.0
SMSA Total	1,604,204	1,960,555	1,903,002	5,467,761	+ 9.1	+ 14.4

†Revised.

Reno Standard Metropolitan Statistical Area

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
Total Labor Force (000's)	135.3†	136.0†	135.3	135.5	+ 1.5	+ 2.0
Total Employment (000's)	123.5†	124.6†	125.2	124.4	+ 4.5	+ 1.6
Unemployment (000's)	11.8†	11.4†	10.1	11.1	– 22.7	+ 6.7
Unemployment Rate	8.8†	8.4†	7.5	8.2	– 23.8	+ 5.1
Unemployment Rate (Seasonally Adjusted)	8.7†	8.9†	8.1	8.6	– 5.9	+ 3.2
Agricultural Employment (000's)	.6†	.6†	.7	.6	+ 46.2	+ 0.0
Establishment Based						
Industrial Employment						
Total All Industries (000's)	113.6†	114.7†	115.3	114.5	+ 3.0	+ .8
Mining	.6†	.6†	.7	.6	+ 5.6	– 5.0
Contract Construction	4.8†	5.4†	5.6	5.3	+ 18.8	– 1.9
Manufacturing	7.6†	7.6†	7.7	7.6	+ 2.7	– 3.4
Transportation & Utilities						
Transportation	3.7†	3.7†	3.7	3.7	+ 1.8	– 2.6
Railroads	.5†	.5†	.5	.5	+ 0.0	+ 0.0
Public Utilities	4.1†	4.1†	4.1	4.1	– 2.4	– 8.2
Total Trade	24.9†	25.4†	25.4	25.1	+ 2.6	+ 3.2
Wholesale Trade	6.3†	6.2†	6.2	6.2	+ 1.6	+ 0.0
Retail Trade	18.6†	18.8†	19.2	18.9	+ 2.9	+ 4.2
Finance, Ins., Real Estate	6.1†	6.1†	6.1	6.1	+ 2.2	– 1.6
Service Industries	44.9†	45.3†	45.8	45.3	+ 4.0	+ 2.3
Hotels, Gaming & Recreation	28.6†	29.3†	29.6	29.2	+ 7.2	+ 3.8
Total Government	16.9†	16.9†	16.2	16.7	– 1.0	+ .4
Federal	2.8†	2.8†	2.8	2.8	+ 2.4	+ 6.3
State and Local	14.1†	14.1†	13.4	13.9	– 1.7	– .7
Education	6.8†	6.9†	6.1	6.6	+ .5	+ 1.5
Construction Activity						
Reno						
Residential ($000's)	9,433	2,551	8,066	20,050	+ 202.3	+ 403.4
Nonresidential ($000's)	4,481	956	9,200	14,637	– 11.2	+ 113.8
Total Value ($000's)	13,914	3,507	17,266	34,687	+ 50.0	+ 220.3
# of New Family Units	92	63	222	377	+ 125.7	+ 639.2
Sparks						
Residential ($000's)	10,243	4,106	1,566	15,915	+ 259.7	+ 145.4
Nonresidential ($000's)	694	636	1,546	2,876	– 62.3	– 9.5
Total Value ($000's)	10,937	4,742	3,112	18,791	+ 55.9	+ 94.5
# of New Family Units	486	92	37	615	+ 540.6	+ 161.7
Washoe County (Unincorporated)						
Residential ($000's)	3,925	6,512	6,240	16,677	+ 111.9	+ 56.7
Nonresidential ($000's)	803	505	1,017	2,325	+ 54.9	– 15.1
Total Value ($000's)	4,728	7,017	7,257	19,002	+ 102.8	+ 42.0
# of New Family Units	43	63	68	174	+ 70.6	+ 95.5
Taxable Sales ($000's)	–	–	–	408,672	+ 20.6	+ .6
Gaming Revenues ($000's)	–	–	–	153,363	+ 32.4	+ 11.8
Air Transportation-Reno						
Passengers (Arr. & Depart.)	228,869	224,528	224,298	677,695	– 1.9	+ 6.3
Cargo Enplaned (lbs.)	507,439	461,776	461,688	1,430,903	– 1.8	– 10.1
Cargo Deplaned (lbs.)	573,308	570,429	595,494	1,739,231	+ .4	+ 13.2
Highway Traffic Flow						
7 Selected Stations (Avg. Daily)	57,548	64,589	79,134	67,090	+ 36.0	+ 5.9
Room Tax ($)						
Washoe County	53,348	42,019	54,435	149,802	+ .8	+ 24.1
Reno	475,244	580,333	705,619	1,761,196	+ 68.8	+ 13.4
Sparks	27,931	37,083	45,766	110,780	+ 67.4	+ 26.5
SMSA Total	556,522	659,435	805,820	2,021,777	+ 60.7	+ 14.7

† Revised.

Nevada Statistical Data by County

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
CARSON CITY						
Total Labor Force	21,140†	21,000†	20,900	21,013	+ 1.8	+ 3.0
Total Employment	18,480†	18,620†	18,650	18,583	+ 5.0	+ 2.1
Unemployment	2,660†	2,380†	2,250	2,430	– 17.2	+ 10.8
Unemployment Rate	12.6†	11.3†	10.8	11.6	– 18.7	+ 7.4
Construction Activity						
Residential Value ($000's)	810	890	2,089	3,789	+ 118.0	+ 19.2
Nonresidential Value ($000's)	96	858	1,040	1,994	+ 226.9	– 44.5
Total Value ($000's)	906	1,748	3,129	5,783	+ 146.3	– 14.6
# of New Family Units	22	9	26	57	+ 119.2	+ 185.0
Taxable Sales ($000's)	–	–	–	53,480	+ 22.0	+ 12.2
Gaming Revenues ($000's)	–	–	–	8,762	+ 32.9	+ .5
CHURCHILL						
Total Labor Force	7,010†	7,060†	7,030	7,033	+ 4.2	+ 3.6
Total Employment	6,010†	6,150†	6,230	6,130	+ 8.1	+ 3.5
Unemployment	1,000†	910†	800	903	– 16.1	+ 3.8
Unemployment Rate	14.3†	13.0†	11.4	12.9	– 19.0	+ .8
Construction Activity						
Residential Value ($000's)	579	197	254	1,030	+ 205.6	+ 131.5
Nonresidential Value ($000's)	101	7	96	204	– 12.1	– 76.9
Total Value ($000's)	680	204	350	1,234	+ 163.1	– 7.0
# of New Family Units	7	2	3	12	+ 140.0	+ 200.0
Taxable Sales ($000's)	–	–	–	16,542	+ 39.6	+ 26.4
Gaming Revenues ($000's)	–	–	–	1,178	+ 19.7	+ 15.3
DOUGLAS						
Total Labor Force	8,670†	8,820†	9,090	8,860	+ 6.5	– 2.4
Total Employment	7,780†	7,980†	8,320	8,026	+ 10.6	– 2.4
Unemployment	890†	840†	770	833	– 21.1	– 2.7
Unemployment Rate	10.3†	9.5†	8.5	9.4	– 25.9	– .4
Taxable Sales ($000's)	–	–	–	45,211	+ 7.9	+ 18.6
Gaming Revenues ($000's)	–	–	–	51,300	– .2	– 13.2
ELKO						
Total Labor Force	13,010†	13,110†	13,510	13,210	+ 3.8	– 1.4
Total Employment	11,890†	12,130†	12,550	12,190	+ 9.3	– 1.5
Unemployment	1,120†	980†	960	1,020	– 34.9	– 1.0
Unemployment Rate	8.6†	7.5†	7.1	7.7	– 37.3	+ .4
Construction Activity						
Elko City						
Residential ($000's)	167	199	621	987	+ 167.5	– 7.5
Nonresidential ($000's)	15	328	36	379	– 57.6	– 20.9
Total Value ($000's)	182	527	657	1,366	+ 8.2	– 11.6
# of New Dwelling Units	3	5	15	23	+ 187.5	+ 53.3
Taxable Sales ($000's)	–	–	–	40,668	+ 46.3	+ 13.6
Gaming Revenues ($000's)	–	–	–	15,823	+ 20.6	+ 17.8
ESMERALDA						
Total Labor Force	420†	400†	400	406	– 4.7	– 14.1
Total Employment	350†	340†	340	343	– 2.8	– 18.3
Unemployment	70†	60†	60	63	– 13.6	+ 18.8
Unemployment Rate	16.3†	15.8†	14.2	15.4	– 9.7	+ 37.0
Taxable Sales ($000's)	–	–	–	1,590	– 4.3	+ 127.5
EUREKA						
Total Labor Force	830†	800†	860	830	+ 11.7	+ 4.2
Total Employment	710†	720†	780	743	+ 18.7	+ 7.8
Unemployment	120†	80†	70	90	– 25.0	– 18.2
Unemployment Rate	14.7†	10.1†	8.2	11.0	– 30.5	– 20.3
Taxable Sales	–	–	–	2,412	+ 59.3	+ 154.7

Nevada Statistical Data by County (Continued)

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
HUMBOLDT						
Total Labor Force	5,610†	5,640†	5,730	5,660	+ 4.3	– 2.2
Total Employment	4,920†	4,980†	5,170	5,023	+ 9.7	– 3.1
Unemployment	690†	660†	560	636	– 24.8	+ 6.1
Unemployment Rate	12.3†	11.7†	9.8	11.3	– 27.9	+ 8.3
Taxable Sales ($000's)	–	–	–	26,974	+ 31.5	+ 62.4
Gaming Revenues ($000's)	–	–	–	2,351	+ 53.0	+ 15.2
LANDER						
Total Labor Force	2,800†	2,790†	2,800	2,796	+ 6.5	+ 9.0
Total Employment	2,470†	2,460†	2,510	2,480	+ 11.2	+ 6.1
Unemployment	330†	330†	290	316	– 20.2	+ 37.7
Unemployment Rate	11.8†	11.8†	10.3	11.3	– 25.3	+ 26.5
Taxable Sales ($000's)	–	–	–	10,651	+ 16.3	+ 52.5
Gaming Revenues ($000's)	–	–	–	205	+ 12.0	+ 25.0
LINCOLN						
Total Labor Force	2,770†	2,690†	2,710	2,723	– .7	– 5.4
Total Employment	2,470†	2,490†	2,520	2,493	+ 3.9	– 3.1
Unemployment	300†	200†	190	230	– 33.0	– 25.0
Unemployment Rate	10.7†	7.4†	7.1	8.4	– 32.8	– 20.8
Taxable Sales ($000's)	–	–	–	2,782	+ 74.4	+ 93.9
LYON						
Total Labor Force	5,610†	5,710†	5,900	5,740	+ 5.7	+ 6.1
Total Employment	4,900†	5,030†	5,230	5,053	+ 11.2	+ 6.6
Unemployment	710†	680†	670	686	– 22.6	+ 2.5
Unemployment Rate	12.7†	11.9†	11.3	12.0	– 26.7	– 3.8
Construction Activity						
Residential ($000's)	297†	0†	0	297	– 51.0	NA
Nonresidential ($000's)	48	0	0	48	+ 242.9	NA
Total Value ($000's)	345	0	0	345	– 44.4	NA
# of New Family Units	8	0	0	8	– 46.7	NA
Taxable Sales ($000's)	–	–	–	12,381	+ 30.6	+ 9.1
Gaming Revenues ($000's)	–	–	–	363	+ 7.4	+ 10.3
MINERAL						
Total Labor Force	3,860†	3,900†	3,970	3,910	+ 3.3	+ 9.4
Total Employment	3,610†	3,640†	3,690	3,646	+ 5.9	+ 10.1
Unemployment	250†	260†	280	263	– 23.3	+ 1.3
Unemployment Rate	6.5†	6.6†	7.0	6.7	– 25.8	– 8.2
Taxable Sales ($000's)	–	–	–	5,194	+ 18.9	– 8.0
Gaming Revenues	–	–	–	1,314	+ 23.5	+ 4.0
NYE						
Total Labor Force	3,340†	3,290†	3,260	3,296	– 4.9	– 5.4
Total Employment	3,040†	3,030†	3,020	3,030	– 1.5	– 6.9
Unemployment	300†	260†	240	266	– 31.6	+ 14.3
Unemployment Rate	8.9†	7.9†	7.4	8.1	– 28.4	+ 21.0
Taxable Sales ($000's)	–	–	–	15,701	+ 6.2	– 26.3
Gaming Revenues ($000's)	–	–	–	1,166	+ 13.2	– 5.7
PERSHING						
Total Labor Force	1,990†	2,000†	2,040	2,010	+ 2.0	– 2.0
Total Employment	1,890†	1,890†	1,940	1,906	+ 4.8	– .7
Unemployment	100†	110†	100	103	– 31.1	– 20.5
Unemployment Rate	5.1†	5.5†	4.8	5.1	– 32.8	– 17.2
Taxable Sales ($000's)	–	–	–	3,988	+ 39.2	+ 12.3
Gaming Revenues ($000's)	–	–	–	244	+ 190.5	+ 21.4

Nevada Statistical Data by County (Continued)

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
STOREY						
Total Labor Force	1,290†	1,330†	1,390	1,336	+ 12.3	+ 2.0
Total Employment	1,090†	1,130†	1,200	1,140	+ 14.0	– 2.3
Unemployment	200†	200†	190	196	+ 3.5	+ 37.2
Unemployment Rate	15.2†	15.0†	13.6	14.6	– 8.2	+ 10.3
Taxable Sales ($000's)	–	–	–	2,460	+ 160.3	+ 23.3
Gaming Revenues ($000's)	–	–	–	540	+ 147.7	+ 1.5
WHITE PINE						
Total Labor Force	4,500†	4,710†	4,720	4,643	+ 5.9	+ 8.7
Total Employment	3,830†	3,940†	4,000	3,923	+ 10.1	+ 6.7
Unemployment	670†	770†	720	720	– 12.6	+ 21.3
Unemployment Rate	14.8†	16.3†	15.2	15.4	– 17.3	+ 11.3
Construction Activity						
Total Value ($000's)	384	214	676	1,274	+ 281.4	NA
# of Permits	17	15	18	50	+ 8.7	NA
Taxable Sales ($000's)	–	–	–	10,192	+ 29.4	+ 6.7
Gaming Revenues ($000's)	–	–	–	505	+ 16.4	+ 3.7

† Revised.

Selected U.S. and Regional Economic Indicators

Consumer Price Index & Indexes of Selected Categories All Urban Consumers (1967 = 100%)

	April 1983	May 1983	June 1983	2nd Quarter 1983	PERCENT CHANGE 1st Quarter-1983 2nd Quarter-1983	PERCENT CHANGE 2nd Quarter-1982 2nd Quarter-1983
All Items	294.9	296.3	298.1	296.4	+ 1.1	+ 3.2
Food	284.9	285.4	284.3	284.9	– 1.5	– .3
Housing	320.3	321.3	321.4	321.0	+ .8	+ 2.4
Apparel and Upkeep	194.8	195.3	195.6	195.2	+ 1.4	+ 2.0
Transportation	293.5	297.5	298.4	296.5	+ 2.2	+ 3.3
Medical Care	351.2	352.1	354.3	352.5	+ .6	+ 8.8

Producer Price Indexes for Selected Commodity Groupings (1967 = 100%)

All Commodities	300.8	301.7	302.5	301.7	+ .4	+ 1.0
Fuel and Power	648.1	654.8	668.7	657.2	– 2.5	– 1.9
Machinery and Equipment	284.9	285.6	285.8	285.4	+ .7	+ 2.7
Metals and Metal Products	305.3	306.7	306.4	306.1	+ .6	+ 1.2
Nonmetallic Mineral Products	323.7	324.2	324.6	324.2	+ .7	+ 1.5
Textile Products & Apparel	203.3	203.9	204.5	203.9	+ .6	– .4

U.S. Labor Force

Civilian Labor Force (000's)	109,875	110,308	113,383	111,188	+ 1.3	+ 1.0
Total Employment (000's)	98,840	99,543	101,813	100,065	+ 2.6	+ .2
Unemployment (000's)	11,035	10,765	11,570	11,123	– 9.3	+ 8.3
Unemployment Rate	10.0	9.7	10.2	10.0	– 10.7	+ 6.4
Unemployment Rate (Seasonally Adjusted)	10.2	10.1	10.0	10.1	– 2.6	+ 7.4

New Medicare Reimbursement System

NEW YORK, November 3 — In what amounts to a philosophical about-face, the federal government has begun implementing a new Medicare reimbursement system with established prices for services. The system is examined by Coopers & Lybrand in the accounting and consulting firm's new publication for hospital managers, "Prospective Payment System: Medicare."

"Previously, Medicare reimbursements have been based on a reasonable cost of services provided. The new regulations have established a governmental price for medical services that are based on Diagnostic Related Groups (DRGs). From now on, managers will have to operate hospitals more like businesses," says Gregory Moses, partner and national health care industry chairman of Coopers & Lybrand.

In order for hospitals to survive within this new prospective payment system (PPS), they're going to have to learn cost accounting — what it's going to cost them for each service," explains Mr. Moses. "They'll have to learn how to measure productive versus non-productive time and how to trace costs. Doctors and hospital managers will have to work together to accomplish this, and doctors will have to become a more integral part of the hospital's operations."

According to Mr. Moses, new technology will be geared more toward productivity and cost efficiency and not toward major quality improvement.

"The intention," says Mr. Moses, "is to help hospital management develop constructive strategies to cope with the new environment created by PPS." Topics covered include discharges and transfers, DRG classifications, costs excluded from PPS rates, methodology and analysis of key factors for developing the regional standardized amounts applying to each hospital, outliers — cases with an extremely long length of stay (day outliers) or high costs (cost outliers) — and guidance in preparing appeals.

Under the new system, discharges will be classified by DRGs, with 470 of them applicable to Medicare reimbursement. Factors that determine a DRG assignment include diagnosis, principal procedure, discharge, status, age and sex.

Excluded from medicare payment are capital-related costs — like equipment depreciation, taxes and rent — and direct medical education costs. These will continue to be reimbursed under the old cost-based system. Also remaining under the cost-based system are specific types of hospitals — including psychiatric, long-term care, children's and rehabilitation hospitals — as well as those kinds of units operating as distinct parts of a hospital.

PPS will be phased in over three years, effective for hospital cost reporting periods beginning October 1, 1983.
Source: Coopers & Lybrand, New York, N.Y.

The Bureau of Business and Economic Research will be publishing a limited number of copies of:

The Gambling Papers: Proceedings of the Fifth National Conference on Gambling and Risk Taking

Edited by William R. Eadington
Professor of Economics, University of Nevada, Reno

The PROCEEDINGS will include all professional and scholarly papers that were presented at the Fifth National Conference on Gambling and Risk Taking, along with some additional materials that pertained to specific presentations. The Conference, which was held at Stateline, Nevada, in October, 1981, attracted over 120 participants from throughout the United States, Canada, and Europe, and a total of more than 300 registrants. Altogether, the PROCEEDINGS, which is being issued in 13 volumes, includes over 100 papers.

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Workers Have Last Word on Safety at Nuclear Utility Project

The most thorough final construction safety check program ever developed for the nuclear industry — asking workers their opinion of the plant when their work is finished — is underway at the Enrico Fermi 2 nuclear power plant near Monroe, Michigan.

Billed as "Fermi 2 Safeteam," Detroit Edison's newest safety assurance program may end up as a model for the nuclear construction industry, according to several utility officials.

The Safeteam exit interviews of workers leaving the project help Detroit Edison pinpoint possible safety-related problems that could cause a delay in the plant's startup next year and let the utility thank each construction worker for his or her contribution.

Fermi 2 workers leaving the job site report to an "Appreciation center," where they are offered the opportunity for an interview, explained Bert Heffner, director of the Safeteam project. The confidentiality of the interview is protected by computer safeguards and by never matching the workers' names with their concerns. Only the concerns are known to and investigated by the Safeteam investigation group, Heffner said. The Safeteam also interviews members of key groups on site, such as quality assurance, quality control and engineering, on a regular basis.

"The Fermi 2 Safeteam is unique in the nuclear power industry," said Donald A. Wells, Detroit Edison's manager of quality assurance. "It focuses on the concerns of the workers because the workers really are the ones who built the plant in a way to help ensure that it will operate safely and efficiently."

The program has been in operation for more than five months and has broad support among the 77 firms and more than a dozen labor unions whose members are working on the project.

The Safeteam idea also has attracted the attention of other utilities building nuclear power plants. Two utilities have already sent representatives to Fermi 2 to see if the Safeteam concept would fit into their safety assurance programs. One of them is now planning to institute a program similar to Safeteam.

Over 2,200 exiting workers and key group members have been offered an opportunity for a safety concern review. Their concerns are followed up and each is informed of results. So far, the reviews have turned up more than 1,150 concerns, with fewer than one third related to plant safety. The rest deal with questions about work procedures, housekeeping items, general management practices and efficiency.

Safeteam does not replace the many inspection and quality assurance programs currently required by the Nuclear Regulatory Commission and Detroit Edison, but acts as a final safety net if a problem is not caught and to catch problems earlier than other programs, said Heffner.

"If we save just one day in getting this plant up and running safely and reliably, we've saved the people of Michigan in our service area $1 million," Heffner said.

Fermi 2 has been under construction since 1968 and will cost an estimated $2.7 billion by the time it begins commercial operation in June 1984. The 1,100 megawatt plant, which is about 96 percent complete, will provide electricity for one million persons.

Source: U.S. Committee for Energy Awareness, Washington, D.C.

DATA SOURCES

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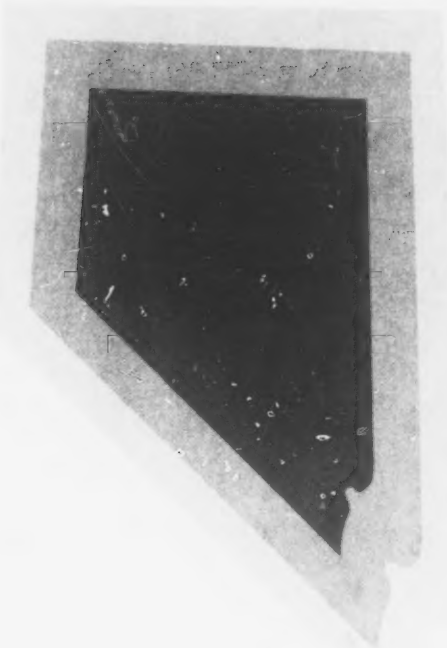

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The Nevada Economy: Recovery and Expansion

*By Thomas F. Cargill**

The current expansion of the U.S. economy officially started in November 1982, according to business cycle turning point dates published by the U.S. Department of Commerce. The Nevada economy has closely followed and reflected the national recovery, though the recovery at the state level differs from previous business cycle expansions in a number of respects. This paper summarizes the recent economic performance of Nevada during 1983 and the likely path of economic activity in 1984. In addition, long-range trends of the Nevada economy are discussed.

Structural Features of the Nevada Economy

T.F. Cargill [1] provides an overview of the unique features of the Nevada economy which shows that the Nevada economy differs in important respects from other state economies nationwide and within the mountain region. These features are briefly summarized as follows:

Geographic Distribution of Population and Economic Activity: Population and economic activity are concentrated in three regions of the state: Las Vegas (Clark County); Reno-Sparks (Washoe County); and Douglas County/Carson City.[1] As of July 1983, these three regions accounted for 58.3, 23.2, and 6.2 percent, respectively, of the state's total population of 917,870. In the second quarter of 1983, the three regions accounted for 56.0, 27.7, and 5.9 percent, respectively, of total employment. Thus, the economic structure of the state is both urban and rural.

Lack of Diversification: Nevada's economy is perhaps the least diversified state economy in the U.S. Gaming and other tourist-related services provide the primary base for economic activity. These activities dominate the three major economic areas; however, they are less important for the rural part of the state where mining and agriculture play a relatively greater role. In particular, mining dominates the economies of Esmeralda, Eureka and Lander Counties.

Nonagricultural Employment: Agricultural employment represents a small component of total employment in Nevada, representing 1.2 percent of total employment as of the second quarter of 1983. The structure of nonagricultural employment reflects the importance of the gaming and tourist sectors. Nevada service employment, which includes hotel, gaming and recreation employment, constitutes about 40 percent of total employment compared to about 20 percent for the nation and has grown in relative importance (Table 1). Service employment in Nevada increased from 38.7 percent of the total in 1970 to 42.2 percent of the total employment in 1982. Service employment has also increased in relative importance for the nation as a whole, and Nevada is thus reflecting a national trend.

Construction employment in Nevada has been relatively more important compared to the nation. In 1982, construction employment represented 4.8 and 4.1 percent of total employment for Nevada and the U.S., respectively. In addition, construction employment for both Nevada and the U.S. has declined as a percentage of the total since the late 1970s due to high and fluctuating interest rates, structural changes in the financial system, and uncertainty over the near course of monetary and fiscal policies.

Constant Structure: The characteristics of the Nevada economy reflected by the employment figures in Table 1 have remained stable over the past decade despite the significant growth experienced in Nevada. The recent recession and depressed condition in the gaming industry have stimulated interest in the major economic regions of the state to diversify their economies [3]. At the same time, assuming such diversification efforts are successful, it will take considerable time for significant shifts in employment patterns to be reflected by the data.

The Role of Government: The role of government is reflected by the specific fiscal program maintained by the political system. A fiscal program is defined as a set of spending and taxation rules and, given the fiscal program, the budget balance is determined by the level of state and national economic activity. In Nevada, the political system is highly conservative. In many respects it is difficult to distinguish Republican from Democratic politicians in regard to economic issues. The main distinction is more appropriately one of differences in the degree of conservatism and in the degree to which government should minimize its role in the state economy.

Expenditures in the fiscal program are not unusual in

**Thomas F. Cargill is Professor of Economics, College of Business Administration, University of Nevada, Reno.*

Appreciation is expressed to Jim Newman and Sam Males for comments on an earlier version of this paper which was prepared for the Second Annual Mountain States Region Economic Outlook Conference, co-sponsored by the Bureau of Business and Economic Research at the University of New Mexico and Wharton Econometrics held March 13, 1984, in Phoenix, Arizona. The paper will also appear in a forthcoming issue of the *Southwestern Review of Management and Economics.*

TABLE 1

Nevada and U.S. Nonfarm Wage and Salary Employment by Industry (Number of Jobs)

Category	Nevada Level	Nevada Percent of Total	U. S. Level[a]	U. S. Percent of Total
Mining				
1970	4,052	1.8	627	0.8
1975	4,359	1.6	748	0.9
1980	6,188	1.5	1,033	1.1
1981	7,814	1.8	1,152	1.2
1982	6,620	1.6	1,125	1.2
Construction				
1970	12,522	5.6	3,563	4.6
1975	12,601	4.5	3,573	4.3
1980	26,507	6.3	4,326	4.5
1981	25,751	5.9	4,171	4.3
1982	20,424	4.8	3,866	4.1
Manufacturing				
1970	8,444	3.7	19,410	25.1
1975	12,185	4.3	18,320	22.2
1980	19,173	4.6	20,354	21.4
1981	20,116	4.6	20,227	21.1
1982	18.821	4.4	18,872	20.0
Transportation & Public Utilities				
1970	13,630	6.0	4,510	5.8
1975	16,924	6.0	4,550	5.5
1980	24,168	5.7	5,129	5.4
1981	25,046	5.8	5,169	5.4
1982	24,667	5.8	5,083	5.4
Wholesale Trade				
1970	6,425	2.9	3,806	4.9
1975	8,802	3.1	4,427	5.4
1980	13,199	3.1	5,283	5.6
1981	14,066	3.2	5,400	5.6
1982	13,726	3.2	5,321	5.6
Retail Trade				
1970	33,112	14.7	11,469	14.9
1975	42,729	15.2	12,715	15.4
1980	67,233	16.0	15,067	15.8
1981	60,775	16.1	15,216	15.8
1982	66,323	15.7	15,198	16.1
Finance, Insurance and Real Estate				
1970	8,576	3.8	3,739	4.8
1975	11,150	4.0	4,264	0.2
1980	19,113	4.5	5,276	5.6
1981	19,495	4.5	5,427	5.7
1982	19,182	4.5	5,497	5.8
Services				
1970	87,323	38.7	13,619	17.6
1975	111,810	39.7	15,882	19.2
1980	172,744	41.0	19,382	20.4
1981	177,262	41.0	20,038	20.9
1982	178,540	42.2	20,415	21.6
Government & Gov't Enterprises				
1970	51,148	22.7	16,200	21.0
1975	60,081	21.4	17,704	21.5
1980	71,224	16.9	18,761	19.7
1981	72,298	16.7	18,631	19.4
1982	73,576	17.4	18,583	19.7
Agriculture, Serv., Forestry, Fisheries and Other				
1970	523	0.2	301	0.4
1975	724	0.3	362	0.4
1980	1,357	0.3	549	0.6
1981	1,355	0.3	575	0.6
1982	1,362	0.3	591	0.6
TOTAL				
1970	225,755		77,244	
1975	281,355		82,545	
1980	420,906		95,160	
1981	432,978		96,006	
1982	423,241		94,551	

[a] In Thousands
Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce.

terms of categories compared with those of many other states; however, the level of expenditures devoted to education and social services compared to state population or personal income is considerably lower than most regions of the U.S. The U.S. Department of Education released figures for the nation that ranks Nevada 51 in terms of spending on K through 12 education. While K through 12 education is primarily a local responsibility, local revenues are tied to state revenues as a result of the tax shift program introduced in 1981. The relative low priority of education, both K-12 and college level, is and will remain a serious constraint to economic diversification.

Taxes are derived from a tax on gaming revenues (the most important single source of tax revenue), various excise taxes, and a general 5.75 percent sales tax. Nevada recently altered its tax structure to rely more heavily on sales taxes, and in the wake of Proposition 13 in California, reduced property taxes. The new administration in 1983 made a

small effort to reverse this shift by increasing property taxes, though not to their previous level. Local governments rely primarily on property taxes and a portion of the state sales tax revenue to finance their operations. Nevada does not have an income tax, personal or corporate, nor estate or inheritance taxes. In fact, Nevada has elected not even to accept the minimum federal estate tax credit.

Thus, the fiscal program of the state economy is minimal in terms of expenditures and the tax base is cyclically sensitive. Recent events have shown a greater willingness of Nevada government to adjust expenditures to exogenous changes in tax revenues in order to achieve a legally mandated balanced budget than explore significant revenue enhancements. At the same time, some revenue enhancement efforts have been pursued, such as increasing various fees, increased cigarette taxes, moving up collection dates, etc.

Size of the Nevada Economy: The Nevada economy is small by any standard, both with respect to the U.S. and the western region. Nevada population as of July 1983 was less than one million individuals. Nevada personal income is less than one percent of U.S. personal income and only slightly over 2 percent of personal income in the Twelfth District of the Federal Reserve System.

ECONOMIC PERFORMANCE OF THE NEVADA ECONOMY

Past Growth Record in the 1970s: Nevada has exhibited one of the most impressive growth records in the past decade. During the 1970s, industrial employment and population grew at annual rates of 5.5 and 4.6 percent, respectively. Personal income in real terms grew at annual rates of 6.1 percent, with real per capita income growing at 1.4 percent. These are impressive growth rates and suggest that Nevada was the fastest growing state in the U.S. during the 1970s.

Past Growth Record from 1980 through 1982: The performance of the Nevada economy in the first three years of the 1980s ended the debate regarding the degree to which the Nevada economy is sensitive to the national business cycle Cargill [2]. Nevada experienced a fairly broad based decline in economic activity from 1980 through 1982. Personal income growth slowed from the high rates of the 1970s (Table 2) and real personal income declined from 1981 to 1982. The unemployment rate increased from 6.3 percent in 1980 to 10.1 percent in 1982. The gaming industry also reflected the slow-down in activity. Gross gaming revenues (gross winnings on all games) grew at 5.9 and 4.0 percent in 1981 and 1982, respectively, compared to previous growth rates well in excess of 10 percent. Employment in the hotel, gaming, and recreation component of industrial employment increased 0.4 percent in 1981 and declined slightly in 1982. Taxable sales declined from 1981 through 1982. The slowdown and decline in taxable sales combined with a 1981 tax shift from property to sales taxes created an adverse budget environment for the state. Tax revenues fell significantly below projections and forced widespread budget cuts to maintain a legally mandated balanced budget.

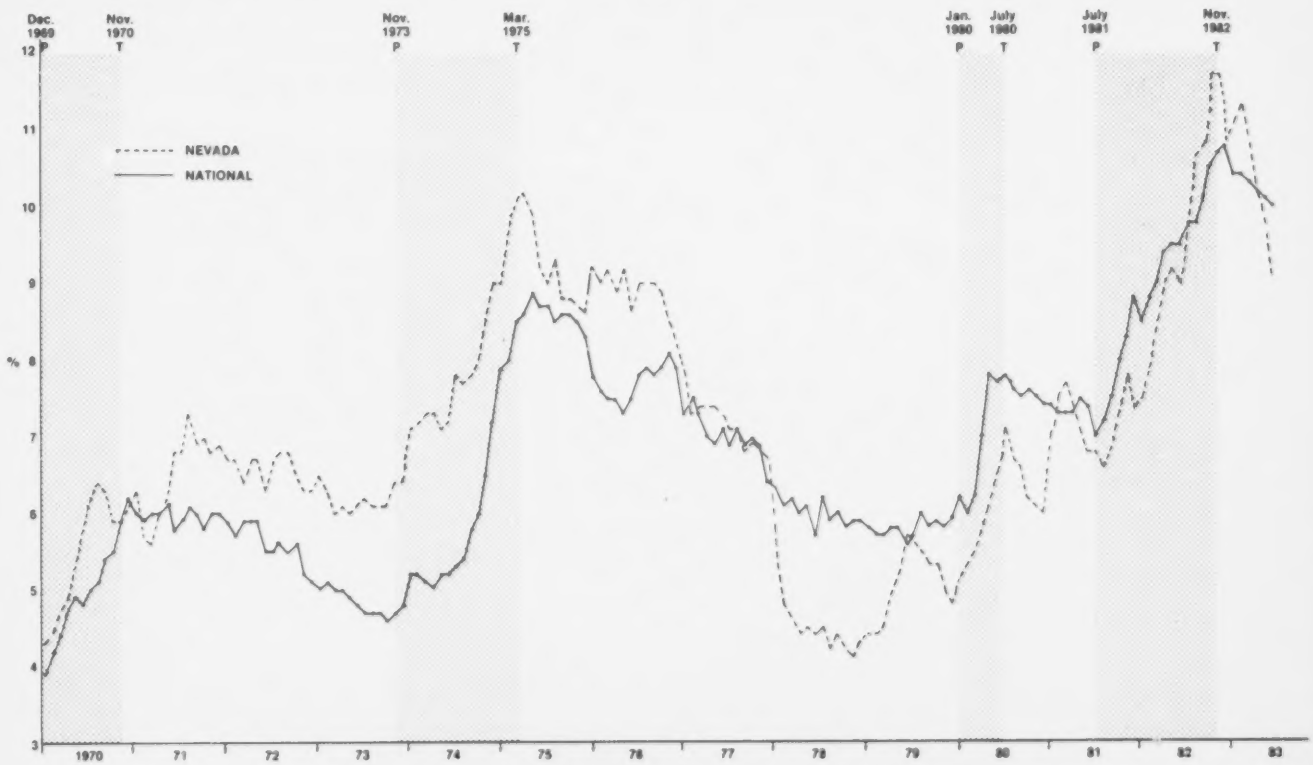

Figure 1: Nevada and National Unemployment Rates (Seasonally Adjusted), January 1970 – June 1983

Relationship Between the Nevada and National Economies: Figure 1 illustrates Nevada and U.S. unemployment since 1970, along with dates for turning points in the business cycle. The data clearly illustrate the cyclical pattern of economic activity in Nevada; however, Nevada has been overall less sensitive to the national swings in economic activity compared to most other states. Before 1980, recessions at the national level were reflected primarily by slower growth rates in various sectors of the Nevada economy. The Nevada recession of 1980-82, however, was more broad based and severe than previous declines.

THE NEVADA ECONOMY IN 1983

As the U.S. economy entered the current decade, economic conditions had not been as unstable since the Great Depression of the 1930s. By early 1980, the inflation rate had reached almost 20 percent per year, the prime interest rate reached 20 percent, the price of gold and silver had reached record levels, financial markets and institutions were in disarray, and the fact that the U.S. had just "celebrated" the fiftieth anniversary of the Great Depression did not go unnoticed by policy makers and observers. Technically, the U.S. experienced a short but sharp recession from January 1980 through July 1980, followed one year later by another recession from July 1981 through November 1982. The U.S. is currently in the expansion phase of the business cycle. In many respects, however, it is preferable to regard the period from January 1980 through the current period as one of recession and unstable economic activity despite the official turning point chronology published by the Department of Commerce.

TABLE 2

Selected Economic Indicators for Nevada and the U.S. (Percentage Changes Where Applicable)

	Nevada	U.S.
Personal Income (Nominal)		
1976-1980	17.4%	11.7%
1979-1980	15.0	11.0
1980-1981	13.6	12.5
1981-1982	5.7	5.9
1982-1983	5.3	5.1
Personal Income (Real)[b]		
1976-1980	7.0%	1.8%
1979-1980	1.3	-2.2
1980-1981	3.0	1.9
1981-1982	- 0.4	-0.2
1982-1983	1.6	1.5
Total Civilian Employment		
1976-1980	9.7%	2.8%
1979-1980	6.1	0.5
1980-1981	6.9	1.1
1981-1982	1.2	-0.1
1982-1983	1.8	-0.6
Unemployment Rates[b]		
1976-1980	6.4%	6.8%
1980	6.3	7.1
1981	7.1	7.6
1982	10.1	9.7
1983	9.0	10.0

Note: [b]Data are seasonally adjusted and the CPI is used to calculate real magnitudes.

Source: *Western Economic Indicators,* Federal Reserve Bank of San Francisco, Number 3, 1983, and *Economic Indicators,* Council of Economic Advisers, November 1983.

TABLE 3

Mining's Share of Nonagricultural Payrolls By County, 1969-81

County	All Years Average	1981	Range% Low		Range% High	
Carson City	1.1%	0.9%	0.1 %	(1980)	2.2%	(1969)
Churchill	1.7	5.8	0.4	(1972)	5.8	(1981)
Clark	0.2	0.3	0.11	(1971)	0.3	(1981)
Douglas	0.2	0.1	0	(1975)	0.4	(1969)
Elko	6.3	13.6	2.7	(1972)	13.6	(1981)
Esmeraldo	73.3	58.8	70.6	(1975)	89.9	(1977)
Eureka	82.4	75.6	66	(1978)	95.2	(1977)
Humboldt	7.2	9.4	2.8	(1974)	20.7	(1969)
Lander	71.5	68.4	56.5	(1978)	81.1	(1973)
Lincoln	29.9	18.9	9.8	(1972)	44.6	(1975)
Lyon	37.0	20.7	8.5	(1979)	54.3	(1970)
Mineral	6.7	13.5	1.1	(1977)	13.5	(1981)
Nye	9.2	18.0	3.5	(1969)	18.0	(1981)
Pershing	37.0	52.4	26.8	(1978)	52.4	(1981)
Storey	39.9	44.5	20.6	(1976)	60.9	(1980)
Washoe	0.9	1.1	0.7	(1973)	1.3	(1980)
White Pine	36.5	20.0	9.5	(1979)	52.4	(1969)

Source: J.L. Dobra and G. Atkinson, "An Analysis of the Economic Impact of the Mining Industry on Nevada's Economy," *Nevada Bureau of Mines & Geology Special Publication MI-1982, The Nevada Mineral Industry,* 1982.

Table 2 reports selected Nevada and U.S. economic indicators for the period from 1976 through early 1983. The growth rates and unemployment levels for the second part of the 1970s clearly illustrate the faster growth record of Nevada relative to the rest of the nation. The data suggest two observations about Nevada's more recent economic performance. First, there is a noticeable slowdown in economic activity starting in 1980 which continued until late 1982. Second, there is little difference in the performance of Nevada relative to the nation in regard to personal income and unemployment rates; however, civilian employment has been less impacted in Nevada than the nation. Third, the timing of the recovery in Nevada has been coincident with the nation as a whole. Figure 1 also suggests a coincident timing relationship.

The data in Table 2 end with the first quarter of 1983. More recent data suggest that the recovery in Nevada has accelerated and is broadly based, with the exception of the mining sector. At the state level and in the three major economic regions, mining contributes a small percentage to total employment; however, for several counties, mining is a major contributor to the economic base. Table 3 presents data on mining's share of nonagricultural payrolls by county over the period from 1969 through 1981. Mining is economically important for much of the rural part of the

state; however, even in those areas, mining has not been a stable contributor to economic activity.

The depressed conditions in the mining sector are a result of declining world prices for gold, barite, and copper, Nevada's major export mining product. Nevada also produces rock aggregate in large quantities for the state construction industry; however, rock aggregate production has suffered from the depressed conditions in the construction sector since 1980.

THE NEVADA ECONOMY DURING THE REMAINDER OF THE 1980s

There is no doubt that the Nevada economy is recovering from the recession and there is a good chance that economic growth will characterize Nevada throughout the remainder of this decade. Population is projected to grow at the rate of 4.2 percent per year over the period 1985 through 1990, and the state is making some progress in diversifying the economic base. The relocation of Xebec, a major electronics firm, to the northern Nevada region is one of the first major relocations to Nevada of a non-gaming and high-technology firm. Both the Reno/Sparks and Las Vegas areas are pursuing a variety of approaches to attract similar types of activities. At the same time, gaming and related tourist services will continue to remain the major economic base of the state. As a reflection of the reliance on tourism, Washoe County has recently approved construction of a major world-class ski resort between Lake Tahoe and Reno/Sparks.

The projected growth at the state level will be concentrated in the three major economic regions. Population is projected to grow over the period 1985 through 1990 at annual rates of 4.3, 4.1, and 5.3 percent for Las Vegas, Reno/Sparks, and Douglas County/Carson City, respectively. Other assessments of potential growth in the Las Vegas and Reno/Sparks areas support these projections. According to W.F. Sprague (1982) in a Federal Home Loan Bank study of the Reno/Sparks area, the area has the potential for significant growth during the remainder of the 1980s.

The overall projection for Nevada in 1984 can be summarized by focusing on the probable levels of three key measures of economic performance reported in Table 4. Personal income in current dollars is projected to increase by 6 percent from 1983 levels, nonagricultural employment is projected to increase by 3 percent from 1983 levels, and the unemployment rate is projected to decline to 7.5 percent in 1984.

The overall projection for 1984 is fairly optimistic at the state level; however, this does not apply to many rural areas. A number of counties are heavily dependent on mining and for reasons discussed above, mining has not taken part in the general recovery. Given reasonable projections in 1984 for metal prices on world markets, it is not likely that recovery will soon return to the mining sector.

SELECTED SPECIFIC ISSUES

There are several key issues important to the economic performance of Nevada and/or the mountain region: the importance and outlook for the mining sector, the fiscal program of the state government, population growth, and interaction between the state and national economy.

The Mining Sector: Mining is important in the rural areas of Nevada; however, it contributes little to the overall economic performance of the state economy. Mining's importance in several rural areas raises serious issues about the economic viability of the rural sector. Metal prices are difficult to forecast and in the past, Nevada mining has been sensitive to changes in world market conditions. It is not likely that gold and copper prices will recover quickly from present levels. Gold is a speculative commodity and an inverse index of world optimism about the ability of governments to control inflation. The price of barite, the second most valuable mineral produced in Nevada, is not likely to recover from its depressed level in the next few years. In any event, mining has not been a very stable contributor to economic activity in Nevada and those areas that rely on mining should diversify in whatever direction possible away from mining, just as the three major areas should diversify away from gaming.

State Fiscal Program: The most significant tax changes occurred in 1981 when property taxes were reduced by 50 percent, and sales taxes increased from 3.5 percent to 5.75 percent. The new governor and administration in 1983 made some adjustments, but overall the tax structure did not change and is not likely to change significantly throughout the 1980s. Shortfalls in revenue will be offset primarily by expenditure reductions rather than revenue enhancement measures. This, of course, raises a contradiction for the state's expressed goal to encourage economic growth in the 1980s and diversify the economy, especially in the direction of "high technology" operations. The state must restructure the tax base; however, the political environment for such a fiscal program change is not optimistic.

Population growth: There is no doubt that Nevada will continue to grow at rapid rates for the next decade. Despite the environmental concerns, the current political structure supports population and economic growth. Many areas in Nevada have a high index of "quality of life" and while the resource base is limited, it is unlikely to become a binding constraint in the near future.

Interaction With the National Economy: Nevada is not an economic island unto itself. Policymakers recognize the sensitivity of Nevada to national swings in economic activity and the disadvantages of a narrow economic base. Nevada appears to be either coincident or slightly lagging in response to the business cycle; however, no detailed study of the phase relationship has been conducted to date.

TABLE 4

Projections of Key Indicators of State Economic Activity

	1983	1984
Personal Income (millions)	$10,969	$11,627
Nonagricultural Employment (thousands)	410	422
Unemployment Rate	9.0	7.5

Note: 1983 values based on most recent data available.

TWO MAJOR ISSUES

There are two major issues with respect to Nevada's economic performance, both for the short and long run. First, economic conditions at the national level are currently stable and improving; however, uncertainty over the federal deficit and the future course of monetary policy makes it difficult to project the recovery and expansion beyond 1984. Should economic conditions seriously deteriorate at the national level, Nevada's economic performance will be adversely impacted. Thus, the continuation of recovery into 1984 and 1985 assumes an expanding national economy.

Second, the gaming industry of Nevada is showing signs of maturity and slower growth [5]. The success of gaming in terms of attaining legitimacy and producing high profits has weakened its foundation for rapid growth in the future. The gaming market in the U.S. has increased to some extent along with expanding income; however, Nevada's market share is declining because of increased competition from Atlantic City and the liberalization of restrictions on gambling throughout the U.S. [6]. Gaming will still contribute to economic growth in the future; however, Nevada can no longer rely on this sector. Efforts to diversify are currently underway, but there is considerable uncertainty about whether the process will offset the maturing of the gaming industry enough to maintain substantial economic growth.

This raises an important issue about population projections for the Nevada economy over the next several decades. Observers both in and outside the state forecast that Nevada will be the fastest or one of the fastest growing states in the U.S. However, these population projections are related to the past growth of the gaming sector which provided the major growth force during the 1960s and 1970s. To the extent that the gaming sector will exhibit slower and/or unstable growth in the future, population growth should be significantly adjusted downward.[2]

Footnotes:

[1]There are 16 counties in Nevada: Churchill, Clark, Douglas, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe and White Pine. Carson City, the state capital, is an independent city with the same status as a county. Douglas County, which includes the South Lake Tahoe area, is combined with Carson City as one region since they are geographically and economically close to each other.

[2]This point is also stressed by Dobra and Harris (1983) [5].

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The Nevada Barite Industry

*By Keith G. Papke**

Nevada ranks number one among the states in the production of barite. Demand for Nevada's barite fluctuates with: (1) activity in domestic drilling for oil and gas, and (2) the volume and delivered price of barite imported from foreign sources. The author surveys the history of barite mining in Nevada and the present status of the industry.

Domestic drilling for oil and gas is concentrated on-shore (and offshore) in Gulf Coast states. Nevada barite is transported to the Gulf states for processing in grinding plants. In the Gulf states market for barite, the Nevada product competes with barite imported from foreign sources, some of which is offered for sale at a delivered price below that quoted for barite from Nevada.

The writer concludes that the long-term outlook for Nevada barite production is good, but that some time may elapse before the barite bumper years of 1980 and 1981 are duplicated.

During the 1970's and early 1980's, the Nevada barite industry expanded rapidly (Figure 1), with mine production rising from 192,000 short tons valued at $1.49 million in 1971 to 2,482,000 short tons valued at $79.7 million in 1981. Barite is the second most valuable mineral produced in Nevada, surpassed only by gold. In 1981 Nevada produced 85% of the total U.S. production of barite and nearly 25% of the world production, but supplied only 53% of the domestic requirements [2, p. 113, 115]. The increased Nevada production was due to rapidly expanding consumption of barite in domestic drilling for oil and gas and to depletion of some barite deposits in Missouri, Arkansas, and Georgia. Decreased drilling starting in early 1982, coupled with a flood of cheap imported barite, has caused a drastic decline in Nevada barite production in the last two years.

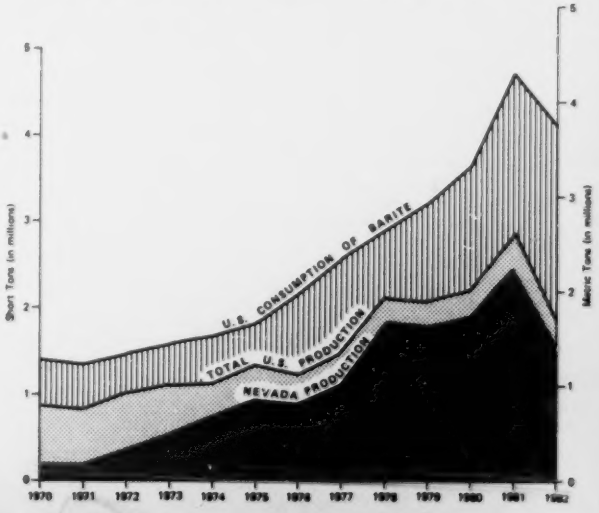
Barite is a heavy, white to dark-gray mineral with the chemical composition $BaSO_4$. It has many and varied industrial uses because of its density (pure barite is about 4½ times as heavy as water), barium content, chemical inertness, and light color when finely ground.

Production of barite in Nevada probably began in 1916, with most of the early production coming from vein deposits in Esmeralda and Mineral Counties. Nevada produced barite in most of the years after 1916, but for many years the annual yield was quite small; total production through 1938 was only 66,424 short tons [3, pp. 1-2]. In the early 1930's, however, a new type of barite deposit was discovered in northern Nevada. These deposits contain dark-gray, fine-grained bedded materials and occur as thick, generally relatively flat-lying units, well suited for open-pit mining. The bedded deposits contrast sharply with the veins which consist of white, coarser-grained materials in relatively thin, generally steeply dipping bodies, that commonly had to be mined by underground methods. Extensive production of bedded barite started in the Battle Mountain area in 1934, and this type of material soon replaced vein barite for most usages. In the past decade, essentially all Nevada production has come from bedded deposits. Total Nevada production through 1982 was about 17 million short tons.

In 1981 barite was produced in Nevada from more than 30 mines operated by about 25 organizations. The barite came from open-pit mines in six counties, but most of the production was from Elko and Lander Counties. According to data collected by the Nevada Division of Mine Inspection, about 840 people were employed in the mining and processing of barite [6, pp. 30-44]. Individual mine production ranged from a few thousand tons annually to about one-half million tons for the Greystone Mine south of Battle Mountain — the world's largest barite mine. Approximately one-third of the Nevada production was direct-shipping material, e.g., material that required only selective mining. The remainder was upgraded to meet required specific-gravity

FIGURE 1

Barite Production and Consumption in the U.S.



*Keith G. Papke is Economic Geologist and Assistant Director, Nevada Bureau of Mines and Geology, University of Nevada, Reno.

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specifications; this beneficiation was done in at least 22 plants. Five grinding plants operate in Nevada to produce the finely ground materials required for drilling muds and other uses. The five largest producing companies were, in alphabetical order, All Minerals, Inc., Dresser Industries, Inc., IMCO Services, Inc., Milchem, Inc., and NL Industries, Inc. With decreased production in 1982, estimated to total 1.8 million short tons, and even lesser production in 1983, many of the mines and processing plants were closed or produced restricted tonnages.

Approximately 120 significant bedded deposits are present in a belt about 300 miles long and 60 miles wide that extends nearly across the state. This belt and some of the larger vein deposits are delineated in Figure 2. Three-quarters of the bedded deposits have had past production and nearly 40 of them have produced more than 25,000 short tons. Reserves of bedded material in Nevada are estimated to total 90 million short tons [5].

As consumption of barite in the U.S. increased, as indicated by Table 1, the pattern of usage changed. The use of barite in drilling for oil and gas was developed in the early 1920's and patented in 1926 by Baroid, Inc. The successor company, NL Industries, Inc. is one of the largest barite producers in Nevada. In this application, finely ground barite is added to the "mud", a drilling fluid consisting mostly of water and swelling clay. During the drilling operation, this fluid is circulated through the hole to bring cuttings to the surface, cool and lubricate the drill bit, and prevent the walls of the hole from collapsing. Barite is added to give weight to the drilling mud, and thus helps prevent costly, physically and environmentally dangerous oil or gas blowouts. At the present time, an average of 25.1 pounds of barite are used for each foot of hole; a total of 57.6 tons are used for the average hole [2, p. 115, 116]. Recycling of drill mud or barite is seldom done, but to a certain extent other heavy materials, such as iron oxides, are used to partially or completely replace barite in the mud.

TABLE 1

Consumption and Usage of Barite in the U.S., 1940-1980

	Total Consumption	Consumption in Drilling	
Year	short tons	short tons	percent
1940	404,000	138,000	34
1950	786,000	484,000	62
1960	1,190,000	920,000	77
1970	1,409,000	1,119,000	79
1980	3,649,000	3,462,000	95

Barite is used also as feedstock in the manufacture of barium chemicals, as an additive in some paints and glasses, and as a filler or extender in plastics, rubber, and numerous consumer products. However, as suggested by Table 1, in the past decade non-drilling usages have decreased, both in percentage of barite consumed and actual tonnage consumed. Thus, 95% of the barite consumed in the U.S. is used in well drilling. Obviously the health of the domestic barite industry is very dependent on the amount of domestic

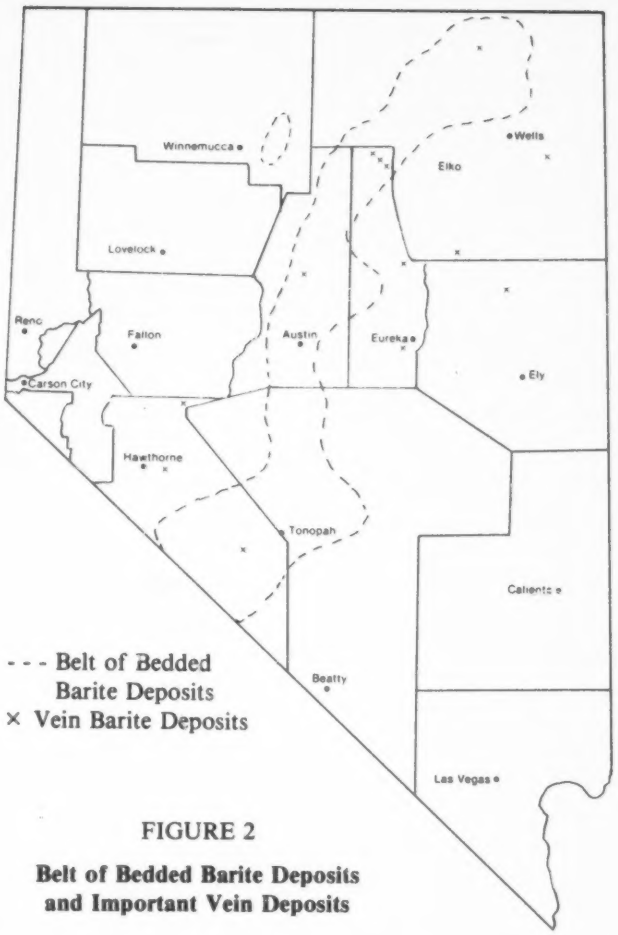

FIGURE 2

Belt of Bedded Barite Deposits and Important Vein Deposits

drilling being done. Drilling activity in the U.S. increased rapidly in the late 1970's and early 1980's, at a rate much faster than growth of domestic barite production. The difference between domestic production and consumption was met by imports shipped through the Gulf Coast states to grinding plants in that area. In early 1982 domestic oil and gas exploration and development declined sharply. This decrease in drill activity was due mainly to a world-wide oversupply of oil and gas with resultant price decreases, but high interest rates and the economic downturn were also factors. The decline in drilling continued until early 1983.

The barite industry is unique among industrial minerals in that indicators of current business activity affecting demand are readily available. These indicators are (1) the volume of oil and gas drilling in the U.S. and (2) the number of drill rigs that are active. Both indicators are reasonably accurate because nearly all domestic barite consumption is in drilling and very little domestic barite is exported. Imports of barite affect the relationship of the indicators to the amount of domestic production, but the total imports are fairly predictable year-to-year. The most readily available and widely used indicator is the rig count; that is, the number of rigs active in the U.S. The rig count is reported weekly in the *Oil and Gas Journal,* with a one-week delay in publication. The

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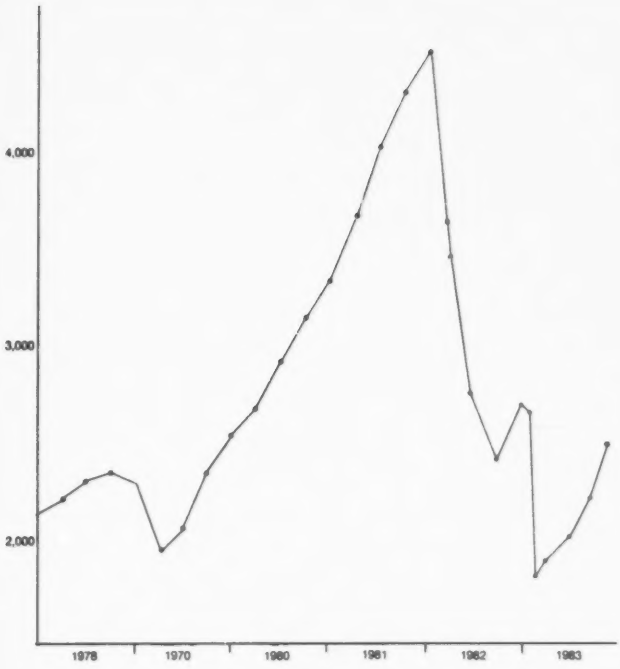

FIGURE 3

Active U.S. Oil and Gas Rigs

relationship between rig count and footage drilled (or barite consumed) is not quite linear, however, because it has been shown [4, p. 25] that efficiency, measured by the number of holes drilled per rig, increases somewhat as the rig count decreases. Nevertheless, rig count is a fair indicator of current barite consumption, and aids Nevada producers in their planning.

Figure 3 is a graph showing rig counts for the past few years. The count reached an all-time high of 4500 in December 1981 and started an unexpected, rapid decline to about 1800 in March 1983. Recently the rig count was back to 2480.

To better understand the Nevada barite industry, one must consider where oil and gas drilling is done in the U.S. (Figure 4). The lower-central states have long been the center for this drilling; in 1982, 58% of the domestic drilling was done in Texas, Oklahoma, and Louisiana. About 84% of all drilling was done in states closer to the Gulf Coast ports than to the barite producing areas in Nevada. This concentration of drilling in the central and eastern states held back development of Nevada barite until the early 1970's, when increased demand and depletion of some closer deposits forced the drilling industry to rely more on Nevada materials.

With rapidly increasing demand for barite in the early 1980's, many new grinding plants were built. This has resulted in considerable overcapacity. There are now about 70 plants where barite is, or has been, ground to the sizes

FIGURE 4

Drilling for Oil and Gas in the U.S. by Regions, 1982

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required for drilling mud or for other usages. Forty-eight of these plants are in the lower central states, near where most of the drilling is done, where foreign imports are readily available, or close to barite producing centers in Arkansas and Missouri. The other 22 plants are in the West, mostly in the Salt Lake area, northern Nevada, or California.

Imports of barite into the U.S. rose rapidly from 955,000 short tons in 1977 to 2,320,000 short tons in 1982. Foreign producers have been aided by low mining costs, depressed ocean-freight rates, and low import duties. Imports of high-grade, hand-sorted materials from mainland China, which began in 1978, are now the principal source; imports from China were 780,000 short tons in 1982, 34% of total imports. The other sources are Morocco, Chile, and Peru. Almost all the foreign barite is shipped to Gulf Coast ports. Until 1982 imports into the U.S. filled in the gap between domestic production and consumption, but since then foreign imports have driven down domestic production.

Another factor working against the Nevada barite industry is the railroad freight rate structure from Nevada to the Gulf Coast grinding plants. This rate, now $39 per short ton, has increased more than 100% since 1978 and is about twice the ocean freight rate from mainland China to the Gulf Coast. Nevada barite delivered to the Gulf Coast is priced as high as $71 per short ton, whereas some of the foreign barite is sold at a considerably lower delivered price. No relief from this situation is expected until ocean freight rates, currently quite depressed, rise or imports are restricted by some other factor.

The long-term outlook for Nevada barite is quite good. The Bureau of Mines predicts that oil and gas exploration in the U.S. will remain at relatively high levels until the year 2000 at least, and predicts an average annual growth rate of the barite industry at 4% from 1983 through 1990 [1, p. 15]. The large reserves of material amenable to open-pit mining in Nevada and relatively low-cost beneficiation seem to indicate that Nevada will continue to be a major barite producer. The short-term outlook is uncertain; 1983 was a bad year for barite, much worse than 1982. However, rig counts are going back up and there is increased interest in oil exploration in the West, both offshore and onshore. Coupled with a probable increase in ocean freight rates, these factors improve the long-run prospects of the Nevada barite industry, although it may be some time before the bumper years of 1980 and 1981 are duplicated.

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A comprehensive study of the Nevada barite industry and deposits, including geologic description of 181 deposits, will soon be published as Nevada Bureau of Mines and Geology *Bulletin 98*.

FASB No. 52 and Equity Per Share*

*By Eugene L. Zieha and Orapin Duangploy***

The authors explain that equity per share (EQPS) at the beginning of an accounting period, plus earnings per share (EPS), minus dividends per share (DPS), may not be equal to EQPS at the end of the accounting period shown in the corporate annual report. For example, when a regulated public utility company sells common stock at a price below EQPS at the beginning of the fiscal year, the stockholders' equity is diluted.

The writers believe that accumulating foreign currency translation adjustments in an equity account, required by FASB No. 52, would add to the prevailing confusion on reporting EQPS.

In conclusion, the authors argue in favor of full disclosure, i.e., inclusion of a Statement of Reconciliation of EQPS, as a supplement to the financial statements published in corporate annual reports.

INTRODUCTION

Equity per share (EQPS) is a financial item that appears frequently in the "highlights" section on the first page of most corporate annual reports. EQPS is associated with earnings, both total and per share, and with dividends, both total and per share. These latter figures are taken directly from the formal financial statements. Stockholders and other annual report readers surely receive a general impression that EQPS figures have a similar standing. In fact, the inclusion of beginning EQPS, Earnings Per Share (EPS), Dividends Per Share (DPS), and ending EQPS conveys the implication that the components of an EQPS reconciliation are being presented. But beginning EQPS plus EPS and minus DPS may not produce the ending EQPS presented in the annual report. This unresolved problem has been complicated by FASB No. 52, adding a new feature to the equity section of the statement of financial condition.

Financial Accounting Standards Board (FASB), No. 52, Foreign Currency Translation, introduced reporting of foreign currency translation adjustments as a separate component of stockholders' equity. This new item in the equity section of the statement of financial condition further complicates any reconciliation of beginning and ending EQPS. Our paper discusses the underlying EQPS reconciliation problem with emphasis on the complication introduced by FASB No. 52. Possible solutions are considered and one is proposed.

FASB NO. 52 AND STOCKHOLDERS' EQUITY

FASB No. 52 revises the accounting and reporting requirements for recognition of foreign currency transactions and translation of foreign currency financial statements. The statement adopts the functional currency approach to translation. Each entity's financial statements are measured in its functional currency before translation to U.S. dollars. Under FASB No. 8, the U.S. dollar was the measuring unit for all entities. Now, the measuring unit is the U.S. dollar or the foreign currency, depending on which is the functional currency.

If the foreign entity is primarily an integral component of the U.S. parent, its functional currency may be the U.S. dollar. If so, the temporal method of translation, as required in FASB No. 8, is applied and the resulting translation adjustments are made to income. The amount moves to retained earnings when the income account is closed at the end of the accounting period. This translation process presents no problem in the reconciliation of beginning and ending EQPS.

However, if an entity's operations are relatively self-contained and integrated within a particular country, the functional currency generally would be the currency of that country. In such a case, the entity's financial statements are translated to U.S. dollars using the current rate method.[1] This differs from measuring exposure to currency fluctuations only on monetary items as under FASB No. 8. The current rate method addresses subsidiary statement translation from an overall entity perspective. Thus, the subsidiary's net asset position is exposed to currency fluctuations under the FASB No. 52 requirements. Translation adjustments must be reported and accumulated in a separate component of equity called Equity Adjustment for Translation.

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**Eugene L. Zieha is Professor of Accountancy, School of Accountancy, University of Missouri-Columbia, Columbia, Missouri; and Orapin Duangploy is Associate Professor of Accounting, California State University-Fullerton, Fullerton, California.

The unrealized effects of the translation of foreign subsidiary financial statements are to be stored directly in this equity account. Changes in such unrealized gains and losses do not appear in the income statement or reside in retained earnings. The justification given in FASB No. 52 for storing the translation adjustments in this unexplained stockholder's equity account is ". . . [translation adjustment] is an unrealized enhancement or reduction having no effect on the functional currency net cash flows."[2] Furthermore, the FASB appears to indicate that translation adjustments should be excluded from net income, but included in comprehensive income, and be treated as an equity adjustment.

The idea that the conditions measured by the unrealized translation adjustment will not have any effect on cash flows is questionable. The net investment in the foreign subsidiary as well as all items on the subsidiary financial statements are exposed to transactions denominated in foreign currencies. Thus, they could be useful for predicting possible corporate cash flows and evaluating the riskiness of cash flow expectations. The explanation given by the board simply confuses and complicates the articulation between income and equity.[3]

EQUITY PER SHARE

EQPS, unlike EPS, is not included in the financial data covered by the auditor's certificate. However, the auditor, the accountant, and the accounting profession have at least an implied relationship to it. Items from the formal financial statements are used to calculate EQPS. In addition, it appears in financial highlights, letters to stockholders, and financial summaries in proximity to items on which accounting authorities have taken significant positions.

EQPS is computed by dividing common stockholders' equity by the number of common shares outstanding. However, this does not necessarily provide the EQPS figure used in the annual report or elsewhere. For example, preferred stock may have been deducted at its liquidation value rather than the book value found on financial statements. Some analysts further complicate this situation by using a book value per share in which intangible assets have been eliminated.

A major point to consider is the frequent incompatibility of EQPS and EPS figures that appear together in the annual report. EQPS, as presented, is based on the number of shares outstanding at the reporting date. EPS, in a simple situation, is based on the weighted average of shares outstanding during the period. EPS, in a more complex situation, gives consideration to share equivalents and potential shares and is reported as both primary EPS and fully diluted EPS.

The introduction of a new equity component by FASB No. 52 can do nothing but increase confusion in the minds of users of accounting information, especially with reference to EQPS. What is the nature of this account, Equity Adjustment for Translation? Is it a genuine stockholder equity account? Is it a deferred gain or loss? Is it a new concept in accounting? Without a clear explanation by accounting authorities there is likely to be additional diversification and confusion relative to per share figures.

A SIMPLE EQPS TEST

A simple test is provided to illustrate complications in reconciling beginning and ending EQPS:

1. Beginning EQPS + EPS - DPS = Expected Ending EQPS.
2. Ending EQPS - Expected Ending EQPS = (Δ).

The difference (Δ) may be explained by one or more of the following items:

The issuance of additional shares for a figure other than existing EQPS. This is the dilution problem that disturbs utility stockholders. If a company having 100,000 common shares outstanding with an EQPS of $20.00 sold an additional 10,000 shares at $15.60 each, the 110,000 shares then outstanding would have an EQPS of $19.60. The result is a dilution of $.40.

Direct entries to retained earnings not included in income. For example, the correction of results of a prior period, due to refunds of money collected from customers as a result of a utility rate case. Also, there may be corrections of mathematical errors in financed statements previously issued.

The use of weighted average shares and share equivalents in the computation of primary EPS. A different divisor, shares outstanding at year end, is used to calculate EQPS.

A net unrealized loss on an investment in equity securities, an owner's equity contra account per FASB No. 12. This is another item that bypasses EPS, DPS, and even Retained Earnings, to change ending EQPS.

Various other transactions that do not go through the income statement, but which affect equity or the number of shares outstanding, such as the translation adjustment we have discussed.

Therefore, the difference (Δ) can be explained, and one of the authors of this paper has been actively promoting a Statement of Reconciliation of EQPS. We believe that it would present relevant information to readers of financial reports. However, concern herein is with the current ambiguous status of the account Equity Adjustment for Translation. Is FASB No. 52 introducing another source of difference in this simple test? Should it be explained to readers of financial reports?

IMPLICATION

Does inclusion of the FASB No. 52 translation adjustment in stockholders' equity imply that a profit or loss has been recognized even though it has not gone through the income statement and does not reside in retained earnings? Consider the comprehensive income concept in FASB Concepts Statement No. 3. Comprehensive income, as defined by the FASB, is the change in net assets (equity) of an entity during a period from transactions related to nonowner sources.[4] What implication does the FASB No. 52 handling of the translation adjustment have when viewed in this light? Moreover, when stockholders' equity is reduced to the single EOPS figure, is there a further implication that the translation adjustment,

now submerged in the single figure, measures a real income or loss because it contributes to the change in EQPS?

SOME ALTERNATIVES

Alternatives based on different perspectives because of the lack of a clear explanation of the FASB No. 52 translation adjustment account can be developed. One approach would be to put FASB No. 52 translation adjustments outside the equity section of the statement of financial condition. Such as approach would be similar to the current treatment of deferred gains or losses. This was advocated but rejected when the statement draft was exposed for comments.

Another perspective views translation adjustments as potential or unrealized translation gains or losses. An approach compatible with this perspective would require the subtotaling of owners' equity before FASB No. 52 translation adjustments are included. Descriptive side captions could be used to make clear the relationship of this measurement of potential or unrealized impact of currency fluctuations to the overall equity balance.

Roff suggests that only short-term unrealized gains or losses should be included in net income.[5] He holds that the translation gains or losses from long-term assets and liabilities should be excluded, since the probability of occurrence and a reasonable estimate of such gains or losses are indeterminable. The adoption of this perspective coupled with the FASB No. 52 approach would require the division of translation gains and losses into two parts. Only the short-term unrealized gain or loss would be included in the computation of EQPS.

Another perspective gives emphasis to the comprehensive income concept. This would include the FASB No. 52 translation gains or losses in the computation of EQPS but it would exclude them from the generally accepted accounting principles net income computation. However, this leads to another complication. Many components of change in EQPS are the result of transactions with owners. An entity concept of comprehensive income would differ from the individual owners' concept found in EQPS. Translation gains or losses would be mixed with stockholder dilution or enhancement resulting from such things as issuance of new securities at an amount other than current EQPS.

CONCLUSION

Confusion exists regarding the EQPS figure regardless of the position taken regarding FASB No. 52 translation gains or losses. Steps should be taken to solve the EQPS problem rather than adding to it as is being done by FASB No. 52. However, it does not seem that a true solution to the problem of accounting for changing and fluctuating exchange rates is forthcoming. A sound conceptual explanation of the nature of the FASB No. 52 translation adjustment account is lacking. A solution that will alleviate part of the EQPS/ FASB No. 52 problem is to resort to the full disclosure concept. This would include the preparation of a Statement of Reconciliation of Equity Per Share referred to previously. A simplified illustration is presented:

ELZD Corporation
Reconciliation of Equity Per Share
Jan. 1, 1983 - Dec. 31, 1983

Equity per Share, Jan. 1, 1983			$30.00
Plus:	Earnings Per Share during 1983	$6.00*	
	Equity Adjustment from Translation Per Share during 1983	4.00	10.00
			$40.00
Less:	Dividends Per Share during 1983	$4.00	
	Dilution from issuance of new shares	1.13	5.13
Equity Per Share, Dec. 31, 1983			$34.87

*would be a deduction if it is a loss.

A more detailed statement would be required in a more complex situation. For example, issuance of shares could be further divided into public offerings, managment stock options, employee stock plans, dividend reinvestment plans, preferred stock conversion and/or bond conversions. Other share transactions include purchase and cancellation of shares and net or gross treasury stock transactions. Other equity entries include retained earnings transactions not included in net income or dividends.

This paper presents the authors' discontent with FASB No. 52, requiring the inclusion of adjustments arising from translation of subsidiary statements denominated in a foreign currency in the equity section of the statement of financial condition. A particularly undesirable effect on equity per share is addressed. However, the proposed solution assumes the probability of FASB No. 52 not being changed. The solution, based on the concept of full disclosure, is the introduction of a Statement of Reconciliation of Equity Per Share. FASB No. 52 translation adjustments would be included as a line item therein.

Footnotes:

[1]Ernest & Whinney, *Financial Reporting Developments — Foreign Currency Translation Statement No. 52* (USA: Ernest & Whinney, 1982), p. 1.

[2]FASB Statement No. 52, *Foreign Currency Translation* (Stamford, Conn.: FASB, Dec. 1981), par. 113.

[3]Curtis L. Norton and Gary A. Porter, "Professional Notes — The comprehensive income approach and FASB Statement No. 52: are they compatible?" *Journal of Accountancy*, Dec. 1982, p. 96.

[4]FASB Concepts Statement No. 3, *Elements of Financial Statements of Business Enterprises* (Stamford, Conn.: FASB, 1980), par. 56.

[5]Bradley M. Roff, "FASB No. 8 - Did It Help or Hinder Multinational Reporting?" *Financial Executive*, March 1982, p. 32.

Nevada Economic Indicators

Statewide Statistical Data

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
Total Labor Force (000's)	499.5†	497.4†	496.9	497.9	– .6	+ 1.2
Total Employment (000's)	454.7†	454.1†	455.1	454.6	+ .6	+ 2.7
Unemployment (000's)	44.8†	43.3†	41.8	43.3	– 9.0	– 12.5
Unemployment Rate	9.0†	8.7†	8.4	8.7	– 8.4	– 13.3
Unemployment Rate (Seasonally Adjusted)	9.2†	9.4†	9.1	9.2	– 4.8	– 10.1
Agricultural Empl. (000's)	6.7†	7.2†	5.9	6.6	+ 18.6	+ .5
Establishment Based Industrial Employment						
Total All Industries (000's)	417.8†	419.1†	424.3	420.4	+ 1.8	+ 3.0
Mining	6.4†	6.5†	6.5	6.5	+ 6.0	– 2.5
Contract Construction	23.0†	23.5†	23.9	23.5	+ 10.5	+ 7.6
Manufacturing	18.6†	18.7†	18.7	18.7	+ .5	+ .7
Transportation & Utilities						
Transportation	12.7†	12.7†	12.9	12.8	+ 2.7	– 1.8
Railroads	1.8†	1.8†	1.8	1.8	+ 0.0	+ 0.0
Air	2.7†	2.7†	2.7	2.7	+ 1.2	– 4.7
Public Utilities	11.4†	10.7†	11.3	11.1	– 3.2	– 6.7
Total Trade	84.5†	84.2†	84.1	84.3	+ 2.0	+ 3.9
Wholesale Trade	14.1†	14.2†	14.2	14.2	+ 2.2	+ 1.9
Retail Trade	70.4†	70.0†	69.9	70.1	+ 1.9	+ 4.3
Finance, Ins., Real Estate	18.6†	18.6†	18.7	18.6	+ 2.0	+ 3.9
Service Industries	188.4†	190.0†	190.3	189.6	+ 3.1	+ 4.6
Hotels, Amusement and Recreation Combined	126.6†	128.1†	128.0	127.6	+ 4.4	+ 6.6
Medical and Health	15.1†	15.0†	15.1	15.1	– .9	– 3.8
Total Government	54.2†	54.2†	57.9	55.4	– 5.4	– 1.3
Federal	9.9†	9.7†	9.6	9.7	+ .7	– .3
State and Local	44.3†	44.5†	48.3	45.7	– 6.5	– 1.5
Education	15.6†	15.8†	20.4	17.3	– 15.5	+ .8
Average Weekly Earnings in Selected Industries						
Mining	528.04†	533.89†	532.16	531.36	+ 3.9	+ 12.6
Construction	584.91†	576.29†	595.43	585.54	– 2.7	– 7.4
Manufacturing	344.19†	346.50†	355.27	348.65	+ .7	+ 5.0
Public Utilities	462.15†	478.99†	469.40	470.18	+ 1.8	+ 8.1
Trade	261.27†	272.30†	272.40	268.66	+ 1.5	+ 1.5
Average Weekly Hours in Selected Industries						
Mining	43.0†	43.3†	43.3	43.2	+ .9	+ 6.9
Construction	35.6†	34.8†	35.4	35.3	– .8	– 2.0
Manufacturing	38.5†	38.5†	39.3	38.8	+ 1.2	+ 3.2
Public Utilities	39.5†	40.3†	40.5	40.3	+ 1.1	+ .8
Trade	33.8†	34.6†	34.7	34.4	+ 1.3	+ 0.0
Average Hourly Earnings in Selected Industries						
Mining	12.28†	12.33†	12.29	12.30	+ 3.0	+ 5.3
Construction	16.43†	16.56†	16.82	16.60	– 1.9	– 5.5
Manufacturing	8.94†	9.00†	9.04	8.99	– .6	+ 1.8
Public Utilities	11.70†	11.74†	11.59	11.68	+ .7	+ 7.3
Trade	7.73†	7.87†	7.85	7.82	+ .2	+ 1.5
Construction Activity						
Residential ($000's)	84,600	92,400	44,800	221,800	– 22.[illegible]	+ 50.4
Nonresidential ($000's)	23,900	41,900	28,000	93,800	– 28.5	+ 93.0
Nonbuilding ($000's)	14,100	37,000	32,900	84,000	+ 172.7	+ 68.3
Total ($000's)	122,600	171,400	105,800	399,800	– 10.5	+ 62.5
# of New Dwelling Units	1,865	2,055	812	4,732	– 13.3	+ 46.0

Statewide Statistical Data (Continued)

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
Banking Activities ($000,000's)						
Loans	2,179	2,129	2,143	2,150	+ 2.8	+ 2.7
Investments	799	827	835	820	+ 6.7	+ 20.2
Total Deposits	3,260	3,308	3,260	3,276	+ 1.4	+ 8.7
Demand Deposits	939	979	920	946	+ 2.8	+ 2.9
Time & Savings Deposits	2,314	2,327	2,335	2,325	+ .9	+ 11.2
Tax Collections ($)						
Liquor	1,013,205	1,147,202	1,116,805	3,277,212	– 2.8	+ 16.7
Cigarette	1,923,731	779,811	992,184	3,695,726	+ 2.5	+ 2.7
Fuel	3,863,802	4,012,928	4,201,795	12,078,525	+ 12.2	+ 6.3
Quarterly Taxable Sales ($000's)	–	–	–	1,776,588	+ 3.2	+ 5.0
Quarterly Gaming Revenues ($000's)	–	–	–	794,184	+ 12.8	+ 9.8
Highway Traffic Flow						
17 Selected Stations (Avg. Daily)	135,673	137,708	118,734	130,705	+ 15.6	+ 2.9

† Revised.

Las Vegas Standard Metropolitan Statistical Area

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
Total Labor Force (000's)	278.3†	276.7†	277.7	277.6	– 1.5	+ 1.6
Total Employment (000's)	251.1†	250.0†	251.7	250.9	– .7	+ 3.3
Unemployment (000's)	27.2†	26.7†	26.0	26.6	– 3.9	– 11.9
Unemployment Rate	9.8†	9.6†	9.4	9.6	– 2.4	– 13.5
Unemployment Rate (Seasonally Adjusted)	9.6†	9.8†	9.7	9.7	– 1.7	– 11.8
Agricultural Employment (000's)	1.2†	1.2†	1.0	1.1	+ 17.2	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	234.4†	235.2†	238.1	235.9	+ 1.0	+ 4.0
Mining	.4†	.4†	.4	.4	+ 0.0	+ 0.0
Contract Construction	13.2†	13.5†	13.9	13.5	+ 6.8	+ 5.5
Manufacturing	7.0†	7.0†	7.0	7.0	+ 2.9	+ 8.2
Transportation & Utilities						
Transportation	7.6†	7.6†	7.7	7.6	+ 1.8	– 1.7
Railroads	.7†	.7†	.7	.7	+ 0.0	+ 0.0
Air	2.1†	2.1†	2.1	2.1	+ 0.0	– 7.4
Public Utilities	5.9†	5.9†	5.9	5.9	– 1.1	– 3.3
Total Trade	48.1†	47.5†	47.3	47.6	+ .7	+ 3.8
Wholesale Trade	6.7†	6.7†	6.7	6.7	+ 2.6	+ 2.6
Retail Trade	41.4†	40.8†	40.6	40.9	+ .4	+ 4.0
Finance, Ins., Real Estate	10.6†	10.8†	10.8	10.7	+ 2.5	+ 5.9
Service Industries	116.2†	117.1†	117.5	116.9	+ 1.7	+ 5.5
Hotels, Gaming & Recreation	77.6†	78.6†	78.8	78.3	+ 1.9	+ 7.2
Total Government	25.4†	25.4†	27.6	26.1	– 5.4	– 1.1
Federal	5.0†	5.0†	4.9	5.0	+ 0.0	– .7
State and Local	20.4†	20.4†	22.7	21.2	– 6.6	– 1.2
Education	7.5†	7.5†	10.2	8.4	– 16.3	– .8
Construction Activity						
Las Vegas						
Residential ($000's)	16,321	9,399	14,044	39,764	+ 11.9	+ 187.8
Nonresidential ($000's)	4,656	9,535	10,607	24,798	+ 41.9	– 58.9
Total Value ($000's)	20,977	18,934	24,651	64,562	+ 21.8	– 12.8
# of New Family Units	543	237	674	1,454	+ 39.7	+ 228.2
North Las Vegas						
Residential ($000's)	1,760	139	1,841	3,740	– 35.8	– 19.4
Nonresidential ($000's)	73	1,921	432	2,426	+ 8.8	– 62.2
Total Value ($000's)	1,833	2,060	2,273	6,166	– 23.4	– 44.2
# of Permits	46	38	61	145	– 44.4	– 31.3
Energy Consumption						
Sales (000's KWH)	664,976	617,648	570,186	1,852,810	+ 41.2	+ 3.6
# of Customers	209,576	210,707	211,814	210,699	+ 1.4	+ 3.8
Taxable Sales ($000's)	–	–	–	943,057	– 1.3	+ 5.7
Gaming Revenues ($000's)	–	–	–	486,956	+ 4.3	+ 6.9
Air Transportation-McCarran						
Passengers (Arr. & Depart.)	836,432	882,353	831,752	2,550,537	– 5.2	+ 7.7
Cargo Enplaned (lbs.)	858,461	912,504	919,490	2,690,455	– 16.3	+ 8.5
Cargo Deplaned (lbs.)	1,432,437	1,580,281	1,775,767	4,788,485	– 9.6	+ 8.5
Highway Traffic Flow						
4 Selected Stations (Avg. Daily)	36,807	36,708	32,677	35,330	+ 11.5	+ 3.3
Room Tax ($)						
Clark County	1,474,027	1,231,902	1,409,740	4,115,669	– 12.3	+ 2.8
Las Vegas City	249,551	236,079	241,460	727,090	– 3.3	+ 4.6
SMSA Total	1,732,038	1,474,531	1,658,465	4,865,034	– 11.0	+ 3.0

†Revised.

Reno Standard Metropolitan Statistical Area

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
Total Labor Force (000's)	135.6†	135.5†	135.5	135.5	– 0.0	+ .8
Total Employment (000's)	125.9†	126.4†	126.8	126.4	+ 1.5	+ 2.3
Unemployment (000's)	9.8†	9.1†	8.7	9.2	– 17.1	– 15.3
Unemployment Rate	7.2†	6.7†	6.4	6.8	– 17.8	– 16.4
Unemployment Rate (Seasonally Adjusted)	7.7†	7.8†	7.4	7.6	– 10.9	- 16.4
Agricultural Employment (000's)	.8†	.8†	.7	.8	+ 21.1	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	116.2†	116.9†	118.7	117.3	+ 2.3	+ 2.8
Mining	.8†	.8†	.8	.8	+ 26.3	+ 20.0
Contract Construction	6.1†	6.3†	6.3	6.2	+ 16.1	+ 12.7
Manufacturing	7.7†	7.8†	7.8	7.8	+ 1.7	+ 0.0
Transportation & Utilities						
Transportation	3.8†	3.8†	3.8	3.8	+ 2.7	– .9
Railroads	.5†	.5†	.5	.5	+ 0.0	+ 0.0
Public Utilities	4.1†	3.7†	4.1	4.0	– 4.0	– 7.0
Total Trade	25.7†	25.8†	26.1	25.9	+ 3.1	+ 4.9
Wholesale Trade	6.3†	6.3†	6.3	6.3	+ .5	+ 1.6
Retail Trade	19.4†	19.5†	19.8	19.6	+ 3.9	+ 6.0
Finance, Ins., Real Estate	6.2†	6.2†	6.2	6.2	+ 1.1	+ 2.8
Service Industries	46.6†	47.1†	47.1	46.9	+ 3.6	+ 3.2
Hotels, Gaming & Recreation	31.3†	31.7†	31.6	31.5	+ 7.3	+ 8.9
Total Government	15.2†	15.4†	16.5	15.7	– 5.8	– 1.1
Federal	2.8†	2.8†	2.8	2.8	+ 0.0	+ 3.7
State and Local	12.4†	12.6†	13.7	12.9	– 7.0	– 2.0
Education	5.0†	5.2†	6.7	5.6	– 14.6	+ 1.2
Construction Activity						
Reno						
Residential ($000's)	2,264	4,920	3,635	10,819	– 46.0	+ 33.3
Nonresidential ($000's)	10,918	2,502	869	14,289	– 2.4	+ 282.9
Total Value ($000's)	13,182	7,422	4,404	25,008	– 27.9	+ 111.0
# of New Family Units	54	63	51	168	– 55.4	+ 9.8
Sparks						
Residential ($000's)	322	4,130	676	5,128	– 67.8	+ 132.0
Nonresidential ($000's)	966	17,951	21,220	40,137	+ 1295.6	+ 1577.3
Total Value ($000's)	1,288	22,081	21,896	45,265	+ 140.9	+ 883.4
# of New Family Units	4	136	12	152	– 75.3	+ 230.4
Washoe County (Unincorporated)						
Residential ($000's)	4,118	6,589	5,486	16,193	– 2.9	+ 9.7
Nonresidential ($000's)	391	579	879	1,849	– 20.5	– 37.3
Total Value ($000's)	4,509	7,168	6,365	18,042	– 5.1	+ 1.9
# of New Family Units	45	85	46	176	+ 1.1	+ 50.4
Taxable Sales ($000's)	–	–	–	445,658	+ 9.1	+ 9.5
Gaming Revenues ($000's)	–	–	–	177,376	+ 15.7	+ 13.9
Air Transportation-Reno						
Passengers (Arr. & Depart.)	240,340	258,333	229,602	728,275	+ 7.5	+ 8.3
Cargo Enplaned (lbs.)	443,244	528,344	575,603	1,547,191	+ 8.1	+ .9
Cargo Deplaned (lbs.)	600,100	692,288	698,815	1,991,203	+ 14.5	+ 27.8
Highway Traffic Flow						
7 Selected Stations (Avg. Daily)	80,049	82,054	69,188	77,097	+ 14.9	+ 2.7
Room Tax ($)						
Washoe County	82,157	105,821	117,157	305,135	+ 103.7	+ 16.7
Reno	765,903	837,355	847,295	2,450,553	+ 39.1	+ 29.0
Sparks	50,987	56,524	52,214	159,725	+ 44.2	+ .0
SMSA Total	899,047	999,701	1,016,666	2,915,414	+ 44.2	+ 17.2

† Revised.

Nevada Statistical Data by County

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
CARSON CITY						
Total Labor Force	20,780†	20,730†	20,700	20,736	– 1.4	+ .5
Total Employment	18,720†	18,750†	18,820	18,763	+ .9	+ 1.5
Unemployment	2,060†	1,980	1,880	1,973	– 18.9	– 7.5
Unemployment Rate	9.9†	9.5†	9.1	9.5	– 17.9	– 8.1
Construction Activity						
Residential Value ($000's)	1,918	1,757	1,537	5,212	+ 37.6	+ 64.3
Nonresidential Value ($000's)	434	1,173	757	2,364	+ 18.6	– 47.9
Total Value ($000's)	2,352	2,930	2,294	7,576	+ 31.0	– 1.8
# of New Family Units	26	27	26	79	+ 38.6	+ 64.6
Taxable Sales ($000's)	–	–	–	63,026	+ 17.8	+ 27.6
Gaming Revenues ($000's)	–	–	–	10,950	+ 25.0	+ 10.7
CHURCHILL						
Total Labor Force	7,200†	7,150†	6,880	7,076	+ .6	+ 2.3
Total Employment	6,330†	6,350†	6,160	6,280	+ 2.4	+ 3.0
Unemployment	870†	800†	720	796	– 11.8	– 2.4
Unemployment Rate	12.1†	11.2†	10.5	11.3	– 12.7	– 4.2
Construction Activity						
Residential Value ($000's)	739	457	430	1,626	+ 57.9	+ 327.9
Nonresidential Value ($000's)	101	351	80	532	+ 160.8	+ 31.0
Total Value ($000's)	840	808	510	2,158	+ 74.9	+ 174.6
# of New Family Units	6	6	5	17	+ 41.7	+ 112.5
Taxable Sales ($000's)	–	–	–	17,866	+ 8.0	+ 2.2
Gaming Revenues ($000's)	–	–	–	1,206	+ 2.3	+ 12.8
DOUGLAS						
Total Labor Force	9,250†	9,080†	9,000	9,110	+ 2.4	– 1.9
Total Employment	8,590†	8,500†	8,440	8,510	+ 5.5	+ .6
Unemployment	360†	580†	560	600	– 28.3	– 27.1
Unemployment Rate	7.1†	6.4†	6.3	6.6	– 29.8	– 25.8
Taxable Sales ($000's)	–	–	–	57,866	+ 28.0	+ 6.1
Gaming Revenues ($000's)	–	–	–	91,414	+ 78.2	+ 15.6
ELKO						
Total Labor Force	13,730†	13,710†	13,390	13,610	+ 2.8	– 2.0
Total Employment	12,870†	12,830†	12,600	12,766	+ 4.5	– .7
Unemployment	860†	880†	790	843	– 17.6	– 18.6
Unemployment Rate	6.2†	6.4†	5.9	6.2	– 20.3	– 17.4
Construction Activity						
Elko City						
Residential ($000's)	264	172	434	870	– 11.9	– 60.4
Nonresidential ($000's)	160	1,204	2,139	3,503	+ 824.3	– 20.4
Total Value ($000's)	424	1,376	2,573	4,373	+ 220.1	– 33.7
# of New Dwelling Units	5	4	11	20	– 13.0	– 65.0
Taxable Sales ($000's)	–	–	–	45,352	+ 11.5	+ 17.6
Gaming Revenues ($000's)	–	–	–	18,468	+ 16.7	+ 26.1
ESMERALDA						
Total Labor Force	410†	410†	400	406	+ .8	– 19.7
Total Employment	340†	340†	330	336	– 1.0	– 22.9
Unemployment	70†	70†	70	70	+ 10.5	+ 0.0
Unemployment Rate	17.2†	17.0†	16.7	17.0	+ 9.5	+ 24.1
Taxable Sales ($000's)	–	–	–	3,268	+ 105.5	+ 176.7
EUREKA						
Total Labor Force	920†	910†	830	886	+ 6.8	+ 1.9
Total Employment	820†	840†	770	810	+ 9.5	+ 9.0
Unemployment	100†	70†	60	76	– 14.8	– 39.5
Unemployment Rate	10.8†	7.8†	7.3	8.6	– 21.5	– 38.9
Taxable Sales	–	–	–	3,023	+ 25.3	+ 62.1

Nevada Statistical Data by County (Continued)

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
HUMBOLDT						
Total Labor Force	5,810†	5,820†	5,630	5,753	+ 1.5	– 3.1
Total Employment	5,280†	5,280†	5,100	5,220	+ 3.7	– 3.2
Unemployment	530†	540†	530	533	– 16.2	– 2.4
Unemployment Rate	9.2†	9.2†	9.3	9.2	– 17.8	+ .7
Taxable Sales ($000's)	–	–	–	26,305	– 2.5	+ 41.2
Gaming Revenues ($000's)	–	–	–	2,815	+ 19.7	+ 2.2
LANDER						
Total Labor Force	2,830†	2,760†	2,710	2,766	– 1.2	+ 2.9
Total Employment	2,520†	2,510†	2,480	2,503	+ .8	+ 2.5
Unemployment	310†	250†	230	263	– 16.8	+ 6.8
Unemployment Rate	10.8†	8.9†	8.5	9.4	– 16.8	+ 2.5
Taxable Sales ($000's)	–	–	–	10,574	– .7	+ 28.8
Gaming Revenues ($000's)	–	–	–	207	+ 1.0	– 13.4
LINCOLN						
Total Labor Force	2,740†	2,710†	2,680	2,710	– .5	– 10.0
Total Employment	2,540†	2,530†	2,490	2,520	+ 1.1	– 5.3
Unemployment	200†	180†	190	190	– 17.4	– 45.7
Unemployment Rate	7.4†	6.6†	7.1	7.0	– 16.3	– 39.5
Taxable Sales ($000's)	–	–	–	2,465	– 11.4	+ 24.0
LYON						
Total Labor Force	5,950†	5,920†	5,770	5,880	+ 2.3	+ 4.8
Total Employment	5,330†	5,350†	5,220	5,300	+ 4.7	+ 7.1
Unemployment	620†	570†	550	580	– 15.5	– 12.6
Unemployment Rate	10.4†	9.6†	9.5	9.8	– 17.6	– 16.7
Taxable Sales ($000's)	–	–	–	12,268	– 9.0	– 10.6
Gaming Revenues ($000's)	–	–	–	385	+ 5.8	– 3.0
MINERAL						
Total Labor Force	4,030†	4,050†	4,030	4,036	+ 3.2	+ 8.4
Total Employment	3,760†	377†	3,750	2,629	– 28.0	– 22.1
Unemployment	270†	280†	280	276	+ 5.1	– 21.0
Unemployment Rate	6.6†	6.9†	6.9	6.8	+ 1.5	– 27.7
Taxable Sales ($000's)	–	–	–	5,917	+ 13.9	+ 47.6
Gaming Revenues	–	–	–	1,518	+ 15.5	+ 4.8
NYE						
Total Labor Force	3,620†	3,630†	3,590	3,613	+ 5.1	+ 2.7
Total Employment	3,370†	3,340†	3,360	3,356	+ 6.0	+ 4.5
Unemployment	250†	290†	230	256	– 4.9	– 15.4
Unemployment Rate	7.0†	8.0†	6.5	7.2	– 9.3	– 16.7
Taxable Sales ($000's)	–	–	–	17,447	+ 11.1	– 9.8
Gaming Revenues ($000's)	–	–	–	1,145	– 2.3	+ 4.9
PERSHING						
Total Labor Force	2,090†	2,100†	2,020	2,070	+ 3.0	– 1.7
Total Employment	1,980†	2,000†	1,930	1,970	+ 3.3	– .8
Unemployment	110†	100†	90	100	– 3.2	– 16.7
Unemployment Rate	5.4†	4.8†	4.3	4.8	– 5.8	– 14.7
Taxable Sales ($000's)	–	–	–	4,095	+ 2.7	– 82.0
Gaming Revenues ($000's)	–	–	–	288	+ 18.0	+ 0.7

Nevada Statistical Data by County (Continued)

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
STOREY						
Total Labor Force	1,450†	1,450†	1,380	1,426	+ .5	+ 4.4
Total Employment	1,250†	1,250†	1,210	1,236	+ 8.2	+ 2.8
Unemployment	200†	200†	170	190	– 3.4	+ 16.3
Unemployment Rate	14.0†	13.9†	12.3	13.4	– 8.0	+ 12.6
Taxable Sales ($000's)	–	–	–	2,661	+ 8.2	+ 2.1
Gaming Revenues ($000's)	–	–	–	884	+ 63.7	+ 2.4
WHITE PINE						
Total Labor Force	4,790†	4,800†	4,730	4,773	+ 2.8	+ 10.0
Total Employment	4,010†	4,020†	3,970	4,000	+ 2.0	+ 7.8
Unemployment	780†	780†	760	773	+ 7.4	+ 22.8
Unemployment Rate	16.3†	16.2†	16.0	16.2	+ 4.8	+ 11.2
Construction Activity						
Total Value ($000's)	303	228	81	612	– 52.0	NA
# of Permits	24	31	37	92	+ 84.0	NA
Taxable Sales ($000's)	–	–	–	10,826	+ 6.2	– 2.6
Gaming Revenues ($000's)	–	–	–	555	+ 9.9	+ 3.2

† Revised.

Selected U.S. Economic Indicators

Consumer Price Index & Indexes of Selected Categories All Urban Consumers (1967 = 100%)

	July 1983	August 1983	September 1983	3rd Quarter 1983	PERCENT CHANGE 2nd Quarter-1983 3rd Quarter-1983	PERCENT CHANGE 3rd Quarter-1982 3rd Quarter-1983
All Items	299.3	300.3	302.6	300.7	+ 1.5	+ 2.7
Food	292.0	292.2	292.6	292.3	+ 2.6	+ 1.6
Housing	324.5	324.8	326.4	325.2	+ 1.3	+ 1.7
Apparel and Upkeep	195.0	197.3	200.4	197.6	+ 1.2	+ 2.9
Transportation	300.4	302.4	303.7	302.2	+ 1.9	+ 2.1
Medical Care	357.7	360.0	361.2	359.6	+ 2.0	+ 8.0

Producer Price Indexes for Selected Commodity Groupings (1967 = 100%)

All Commodities	303.2	304.9	305.[illegible]	304.5	+ 0.9	+ 1.4
Fuel and Power	668.7	674.3	675.[illegible]	673.2	+ 2.4	– 4.3
Machinery and Equipment	287.4	287.1	287.[illegible]	287.3	+ 0.7	+ 2.7
Metals and Metal Products	307.3	308.5	310.[illegible]	308.9	+ 0.9	+ 2.7
Nonmetallic Mineral Products	325.1	326.2	327.2	326.2	+ 0.6	+ 1.8
Textile Products & Apparel	205.3	205.7	205.8	205.6	+ 0.8	+ 0.8

U.S. Labor Force

Civilian Labor Force (000's)	113,980	113,578	112,197	113,252	+ 1.9	+ 1.4
Total Employment (000's)	103,273	103,167	102,366	102,935	+ 2.9	+ 2.1
Unemployment (000's)	10,707	10,411	9,830	10,316	– 7.3	– 4.6
Unemployment Rate	9.4	9.2	8.8	9.1	– 9.0	– 6.2
Unemployment Rate (Seasonally Adjusted)	9.5	9.5	9.3	9.4	– 6.9	– 5.1

RESTAURANT INDUSTRY TAKES POSITIVE STEPS AS IS JOINS ANTI-DRUNK-DRIVING CAMPAIGNS

NEW YORK—The restaurant industry is examining closely its role in the mounting crusade against drunken driving.

In its current issue *Nation's Restaurant News,* the industry newspaper, says drunken driving and liquor service liability may be the major issue restaurant and bar owners will face in 1984.

The newspaper reports bar business declining in many restaurants as customers cut back in fear of more rigid enforcement of DWI — Driving While Intoxicated — laws. In addition, in states where dram shop laws are operative, victims are now suing restaurants and taverns which may have sent drunken drivers onto the road.

Nation's Restaurant News says the industry fears bad public opinion and harsh legislative action in the current campaign against drunken drivers and the casualties they cause.

Restaurant operators, NRN reports, are taking a more-than-just-public-relations approach to the issue. The newspaper reports these positive measures:

- Brock Hotels, which operate in 26 states, is training employees in responsible liquor service, offering complimentary cab rides to patrons who appear intoxicated and to those beyond a cab ride, a free room.

- Houlihan's restaurants are putting up posters warning against drunken driving, and offering free cab rides to inebriated patrons.

- A Washington restaurant offers low-cost rooms for bar guests who've had a few too many and advertises the service with a poster saying, "Take the elevator home."

- A California restaurant offers special "driver" I.D. buttons to patrons who stay sober in order to chauffeur their drinking companions. The buttons can be exchanged later for free drinks.

Such steps, says *Nation's Restaurant News,* are part of a search by the industry for answers to a formidable problem. There is, NRN reports, a pervasive public feeling that the restaurant and bar industry bears major blame for drunk driving accidents. Some 20 states now have dram shop laws permitting victims of alcohol abusers to sue the liquor server and in other states, victims are increasingly allowed to sue under common law.

Stricter enforcement of DWI laws with road blocks and frequent driver inspection has caused a decline in casual drinking, says NRN, quoting restaurant operators in Florida, New Jersey, North Carolina and Washington, D.C.

Restaurant associations have made the problem of drunken driving a major part of their agenda this year and local, state and regional groups have convened to discuss positive steps and alcohol-server liability. The industry aims to take the high road and do something practical, positive and effective before public opinion brings on damaging legislation and it suffers unduely for drunken drivers and the harm they cause.

SOURCE: *Nation's Restaurant News*

The Bureau of Business and Economic Research will be publishing a limited number of copies of:

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Edited by William R. Eadington
Professor of Economics, University of Nevada, Reno

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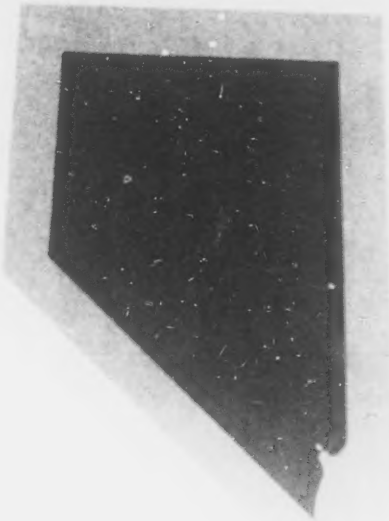

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SPRING 1984

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Nevada Population Projections: 1983-2000

*By John L. Dobra**

This article presents population projections for Nevada and for the state's 17 counties for the years 1983 to 2000. The research on which the population projections are based was done pursuant to a contract of the Bureau of Business and Economic Research, College of Business Administration, UNR, with the Office of Community Services, state of Nevada. This research report may be described as a planning document to be used by agencies of state and local governments dealing with the effects of projected population growth.

An overview of the issues addressed in the study and the major results are presented in section A. More technical descriptions of the methods used are provided in section B.

A. Overview

The projections derived in the research are presented in Tables A-1 and A-2. As the tables show, Nevada's population is expected to reach one million by July 1986 and, very possibly, before the end of calendar year 1985. From Table A-2 it can be seen that relatively more of this growth will occur in the southern part of the state. The population of Clark County is projected to increase from 535,150 in 1983 to 603,090 by 1987, with its proportion of state population decreasing slightly from 58.3% to 57.4% over the same period. Rapid growth is also indicated for Nye County, which is expected to increase its share of state population from 1.6% to 2.4% over this period. Washoe County's share of state population is projected to increase slightly, from 23.2% in 1983, to 23.3% in 1987, while its population increases from 212,870 to 244,270.

TABLE A-1

Nevada Population Projections: 1983-2000

1983	917,870
1984	947,395
1985	980,597
1986	1,014,776
1987	1,050,150
1988	1,086,740
1989	1,128,385
1990	1,164,480
2000	1,498,234

**John L. Dobra is Associate Professor of Economics, College of Business Administration, University of Nevada, Reno.*

The U.S. Bureau of Census has recently reported its projections that Nevada will be the fastest growing state in the last two decades of this century. Consistent with that projection, the results presented here also indicate high rates of growth. As to whether the state will actually reach the 1.9 million person level by 2000 projected by the Census Bureau is, however, a matter of debate. This research makes no attempt to refute that projection. Although the projections presented here are all under the 1.9 million level, the models could be adjusted to achieve this, or higher, projections. The question of which projection to accept depends on the scenario about the future that is chosen. The assumptions used to construct Tables A-1 and A-2 are generally conservative, so that these projections should be regarded as low estimates.

Perhaps as important as the projections themselves, however, are the inferences concerning Nevada's growth potential and growth patterns that can be drawn from the analysis. In a word, the state's population growth potential is large. This assessment is based on several observations about past patterns of growth and the state's resources. For example, since the state is in the "sunbelt" and the Southwest, national trends suggest above average growth for Nevada. Second, since parts of Nevada are considered to be good retirement locations, demographic aging of the national population offers additional weight to the growth side of the equation. Further, the state has untapped mineral and geothermal resources that, with appropriate market and technological conditions, could spur very rapid growth in certain areas of the state.

It seems certain that these factors will continue to affect the growth of the state's population in the future. Uncertainty, however, arises over the relative importance of these individual factors over time. Uncertainty also arises over the stability of the relationships among these and other factors and population over time. An interesting case in point concerns the relationship of population growth in Nevada to unemployment rates. The results below indicate that according to the pattern of the 1970s, Nevada's population increased faster the higher the unemployment rate. This result indicates that in times of high national (and local) unemployment, more unemployed job seekers come to Nevada from out of state than leave; consequently, the state has experienced net growth during these periods. If this relationship holds in the future, then we would expect faster population growth for the state if the national economy is performing

TABLE A-2

Nevada Population Projections By County Based on the Share Approach with Adjustments*

-	1983	1984	1985	1986	1987	1988	1989	1990	2000
Carson City	34,430	34,750	35,150	35,536	35,900	36,250	36,590	36,910	44,993
Churchill	14,890	15,000	15,147	15,281	15,410	15,520	15,630	15,730	17,375
Clark	535,150	549,800	567,150	584,880	603,090	621,890	644,962	661,700	889,269
Douglas	2[illegible]0	23,310	24,480	25,700	26,990	28,340	29,760	31,250	46,257
Elko	20,960	22,030	23,220	24,450	25,750	27,100	2[illegible]530	30,020	36,594
Esmeralda	920	960	1,000	1,049	1,100	1,150	1,200	1,250	1,523
Eureka	1,420	1,480	1,550	1,620	1,700	1,770	1,853	1,940	2,364
Humboldt	12,000	12,790	13,660	14,570	15,530	16,540	17,600	18,730	22,831
Lander	5,550	6,030	6,550	7,100	7,690	8,300	8,950	9,640	11,751
Lincoln	4,460	4,670	4,890	5,130	5,380	5,640	5,910	6,190	7,545
Lyon	15,960	16,600	17,320	18,060	18,830	19,630	20,470	21,350	26,025
Mineral	6,210	6,213	6,210	6,200	6,200	6,200	6,180	6,180	6,180
Nye	15,490	17,750	20,190	22,780	25,530	28,430	31,520	34,790	42,408
Pershing	3,820	3,912	4,020	4,130	4,240	4,350	4,470	4,590	5,000
Storey	1,750	1,820	1,890	1,960	2,040	2,120	2,210	2,300	2,798
Washoe	212,870	220,320	228,030	236,010	244,270	252,820	261,670	270,830	324,041
White Pine	9,790	9,960	10,140	10,320	10,500	10,690	10,880	11,080	11,280
STATE	917,870	947,395	980,597	1,014,776	1,050,150	1,086,740	1,128,385	1,164,480	1,498,234

*Explained in text of article.

poorly and vice versa.

Unfortunately, this logic is clouded by two other factors. First, the dominant pattern of the 1970s was one of very rapid growth, and during the 1970s, Nevada's economy was relatively insensitive to national business cycles. However, the second factor to consider is the dramatic reversal of this pattern during the recession of 1981-83. This last recession had a strong adverse impact upon the state's economy and it remains to be seen whether migration followed past patterns or slowed, as job opportunities in the state declined.

B. Methodology

The methods used in deriving the population projections presented below have involved the three steps described in subsections 1-3. The discussions in these subsections are intended to allow the reader to replicate the methods used in this research if desired, but at a minimum, to allow the reader to see how the data analysis and simulation model have handled the factors influencing population growth in Nevada. The three steps in developing the projections are:

1. Statistical analysis of historical relationships among population and other socio-economic variables.
2. Development of a simulation model using the parameters estimated above to forecast the state's population.
3. Application of a "share approach" method to apportion state population growth to individual counties.

In a general sense, the methods and model used to derive the population projections reflect the reasoning and assumptions of an "employment based population model," described in Dobra and Harris [1]. The principal assumption of both an employment based model and the forecasting model is that population grows in a direct relationship with employment and other factors, such as unemployment and wage levels.

However sound the theory, and however useful the methods derived from the theory appear to be in forecasting population, it remains clear that both forecasts and forecasters are at risk. Alternative assumptions would yield different forecasts and alter the projections provided. Consequently, although we have tried to weigh as many alternative assumptions as possible, the projections derived are still ultimately only educated guesses, with emphasis on "guesswork," because of the assumptions regarding the future. The parameters in the models reflect assumptions not only about population growth, but also factors such as unemployment, wages and expansion of the housing stock over the period of projections. The forecaster's only defense against the risks inherent in the work is to provide a description of the methods and assumptions and let observers see how their alternative scenarios about the future would make a difference.

1. Statistical Analysis of Historical Relationships Among Population and Other Socio-Economic Variables.

The first step in preparing the population projections was an econometric analysis of state and county population data for the period 1969 to 1982. These data included U.S.

Bureau of Census population estimates; state of Nevada, Department of Employment Security employment records by county and sector for the period; and unemployment, wage and housing data from *Western Economic Indicators*, published by the Federal Reserve Bank of San Francisco, for this same period. These data were used to estimate the strength of the relationships among population and these other variables. The measures of these influences are used in subsection 2 as parameters in the simulation model.

The estimation procedures used included a pooled cross-sectional time series estimation [3,5]. Initial estimations pooled data for all seventeen counties for 56 quarters. This technique yielded poor results in some cases for smaller counties, and therefore, ultimately the data were merged into three cross-sections, one cross-section for Clark County, one for Washoe, Carson, and Douglas Counties, and one for the balance of the state.

The basic model worked with is represented by equation (1).

$$(1)\quad POP_t = a_t + b_1 POP_{t-1} + b_2 EMP_t + b_3 UN_t + b_4 W_t + b_5 H_t + b_6 t$$

This equation represents the hypothesis that population at a point in time (t), is equal to some constant (a_t), and the independent variables defined below, multiplied by the regression coefficients, b_1 to b_6. The independent variables examined include:

POP_{t-1} = population lagged one period (quarter)

EMP_t = employment at time t,

UN_t = the ratio: (Nevada Unemployment Rate/ California Unemployment Rate) at time t,

W_t = the ratio: (Nevada Manufacturing Wage/ California Manufacturing Wage) at time t,

H_t = Housing Starts in Nevada at time t, and

t = time.

Since there are serious econometric problems with the inclusion of lagged dependent variables as an independent variable in the model, in this case POP_{t-1}, equation (1) was not used for estimating the parameters b_1 to b_6. Instead, annual population increases (decreases) in the form of $POP_t - POP_{t-1}$ was used as the dependent variable. Experimentation with the functional form of the model ultimately led to use of a log-linear transformation of (1) to equation (2). Shown below the equation are the estimated values of a_t, and b_1 to b_4, and their respective t-statistics.

$$(2)\quad LOG(POP_t/POP_{t-1}) = a_t + b_1 LOG(EMP_t/EMP_{t-1}) + b_2 UN_t + b_3 W_t + b_4 t$$

	-2.02	1.1127		
	(1.03)	(21.9)*		
		0.0954	0.3855	0.35
		(1.94)	(0.8)	(1.02)

*t-statistic for the hypothesis that $b_1 = 1$. All other t-statistics are for the test $b_i = 0, i \neq 1$.

Notice that Nevada housing starts was ultimately dismissed from the model and does not appear in (2). The variable was dismissed because it did not contribute significantly to explanatory power of the model.

Other variables shown in equation (2) that are not highly significant in a statistical sense are the coefficients of the wage and the time variables. In both cases, the *a priori* hypothesis is that the coefficient would be positive. In the case of the wage variable, this tests the hypothesis that higher wages in Nevada would increase net inmigration, other things being equal. In the case of the time variable, the hypothesized sign is positive, since growth in the latter part of the 1969 to 1982 period was both absolutely and relatively greater than earlier in the period.

The coefficient of the unemployment variable, UN, by contrast, does not have the standardly hypothesized sign. The standard hypothesis would hold that as unemployment in Nevada increases relative to California and other areas, workers would tend to migrate out of Nevada, so that the impact on population growth would be negative. However, as shown in (2), the sign is positive and highly significant. One reasonable explanation that can be offered for this apparent anomaly is that if unemployment is high in Nevada it is also relatively high in California and other states. Consequently, the same outmigration expected in Nevada occurs nationally, and any outmigration by Nevadans is outweighed by inmigrants from other states.

The most significant variable in equation (2) in both a statistical and theoretical sense is the log ratio of employment to lagged employment. The size of the coefficient indicates that the relationship between changes in employment and population is elastic in the sense that a given percentage change in employment induces a greater percentage change in population. However, the coefficient is not very large in spite of the fact that it is significantly greater than one at a very high level of confidence. This suggests that the performance of the model could be improved by changing its specification, that is, by adding new variables that would reflect other characteristics of the population itself, such as its age and sex composition, and/or other characteristics of economic factors.

As for alterations in the specification of the role of economic factors in the model, there are several possibilities that future research could investigate. For example, the export-led growth model noted above [1], would suggest that increases in *export sector* employment would lead to population growth, while population growth would lead to growth in the non-export sector. Hence, increased efficiency and less biased coefficients could be obtained by distinguishing employment growth in different sectors of the model.

Other problems with the model above are also related to its specification. Missing from the model are significant social factors that impact Nevada's population as well as the performance of the model. A brief list of these factors include: demographic aging of the national population and changing retirement patterns; a national migration to the "sunbelt," and especially, the Southwest; variable and changing patterns of labor force participation by age and

sex within the national and state population; and other factors. These factors are reflected, but only indirectly, in the time trends and constant terms of the model estimated. Consequently, improved predictive power would result if these factors could be included in a more general cohort-survivor population model.

2. Simulation Model and State Population Forecasts

The next step in deriving population forecasts has involved creating a simulation model. This model uses actual beginning values of population and employment, and projects the population over time using two distinct sets of assumptions. The first set of assumptions concerns the specification and actual parameters used in the model. In this case, the variables and parameters are those used and estimated in subsection 1, above. The second set of assumptions concerns factors external to the model such as the expected rate of national and regional economic growth, population growth, and the expected long run relationship between wages and job opportunities in Nevada *versus* other western states.

The three projections provided in Table B-1 illustrate the sensitivity of the simulation model to the latter type of assumption. The table indicates the effect of different assumed rates of growth in employment on the population projections. The projections show that the model is sensitive to these factors but, using the model estimated above, the relationship is not highly elastic.

The projections in Table B-2 are based on an alternative scenario in which there are relatively low rates of economic growth (3.5% annual growth in employment), but increasing importance of the time trend in Nevada's growth. This amounts to predicting continued high rates of unemployment, and high rates of inmigration caused by non-economic factors such as the "sunbelt" phenomenon, increasing labor force participation among women beyond child-bearing age, and continued or increased attractiveness of Nevada as a retirement area. The consequences of these assumptions are an increasing growth pattern and higher population projections for the entire period.

TABLE B-1

Nevada Population Projections Based on Different Assumed Rates of Growth in Employment

	3.5% growth in employment	4% growth in employment	5% growth in employment
1982	883,060	883,380	884,020
1983	914,430	915,050	916,290
1984	946,490	947,410	949,220
1985	949,414	980,610	982,970
1986	1,013,340	1,014,800	1,017,710
1987	1,048,410	1,050,140	1,053,480
1988	1,084,770	1,086,770	1,090,740
1990	1,161,940	1,164,490	1,169,540
2000	1,681,000	1,686,480	1,698,300

TABLE B-2

Nevada Population Projections Assuming Low Rates of Economic Growth

1983	917,870
1984	947,575
1985	982,776
1986	1,019,920
1987	1,059,160
1988	1,100,675
1989	1,144,640
1990	1,191,260
1995	1,472,680
2000	1,864,584

3. Nevada County Population Projections

The county population projections in Table A-2 have been derived using the most conservative set of assumptions from subsection 2, above, and the "share approach" [4]. Following the share approach, a county's share of the state population at a given time is calculated using equation (3):

$$(3) \qquad CS_{t+m} = \left(\frac{CS_{t+n} - CS_t}{n} \right) m + CS_t$$

As can be seen, the share approach simply projects a county's average share over some period (here, we have used 1980 - 1983), 'm' periods into the future. The obvious problem with this method is that it does not account for dynamic changes in development patterns among counties. It is simply an averaging technique. An advantage of the technique is that it is simple to compute, a fact which probably accounts for its fairly widespread use.

In the case of the numbers and shares presented in Table A-2, the populations and shares have been derived using the share approach and then adjusted in some cases to reflect what we believe to be a more realistic estimate. Hence, the ultimate test of the projections is a matter of reasonableness.

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Nevada's Computer Crime Law

*By Mark G. Simkin**

In July, 1983, Governor Richard Bryan signed into law Assembly Bill 133, Nevada's computer crime law. Legislative subcommittee hearings on AB 133 were held in the spring of that year and there was remarkably little debate. At least in the public hearings, in fact, no one argued against the measure and the chief legislative concerns were over such matters as wording, scope of coverage, and appropriate penalties for violations.

Most authorities would classify computer abuse as a major type of crime and, therefore, a hazard to society requiring protection under the law [7]. Inasmuch as a large number of white collar crimes involve, at least peripherally, computers or computer-oriented data, it is perhaps natural to find strong support for computer-abuse laws. However, there is much debate over issues, such as what constitutes a *computer crime* in contrast to other types of white collar crimes, the seriousness of computer crime, how a law might be drafted to safeguard against it, and the usefulness of a computer crime law in Nevada. These issues and questions are addressed in this paper.

What Is Computer Crime?

There is little agreement over what does, and what does not, constitute a "computer crime." The issue is more than academic because an understanding of antisocial computer-related activities is critical to an understanding of what laws should be passed to make them illegal.

The difficulty of defining computer crime may best be understood by some examples. If an individual physically steals a microcomputer from a warehouse, it is certainly a "computer" crime but such an act could also accurately be called *theft*. Similarly, if an individual prepares phony invoices and uses a company's computer to pay them, this is perhaps better classified as embezzlement. Student misuse of their school's computer is yet a third undesirable computer-related activity, but many feel that these are youthful indiscretions or pranks but not crimes. Finally, if a company claims that a particular software package (i.e., set of computer programs) it has developed can perform data processing tasks that in fact it cannot do, should we call this a computer crime, or merely misrepresentation?

The examples above suggest that a great deal of what might be classified as computer crime is not new at all. Rather, it is "old wine in new bottles" [2]. It is for this reason that some experts suggest that the term "crime by computer" or the more inclusive description "computer abuse" are more suitable than the term "computer crime" [3]. If computer crime is really a new twist on an old rope, however, why do we need a special law for it?

There are many, including this writer, who feel that certain acts having to do with computers are sufficiently unique to warrant a separate law. An excellent example of such an act is the copying of a computer program. Although computer software is protected under this nation's federal copyright laws [3], the ability to protect the rightful owner is limited if only a single unauthorized copy is made. As an historical matter, most computer software has been stolen by others for its direct usefulness to them, not for the purpose of selling copies obtained illegally. A state law dealing with this kind of antisocial activity is desirable.

A second example is the privacy of the information found on computer files. This information need not be copied to be useful to another—merely altering it (e.g., the reversal of a bad credit rating), seeing it (e.g., payroll salaries), or knowing about it (e.g., the names of casino "high rollers") may be sufficient. A law to ensure the confidentiality of *private* information is needed.

A final reason why computer crime may be regarded as unique is attributable to the inability of the courts to prosecute computer crimes under existing statutes. In *Lund vs. the Commonwealth of Virginia,* for example, the Virginia Supreme Court held that the taking of computer time and services in the form of printouts did not constitute larceny because the subject matter of larceny must be goods and chattels. The court held that computer time and services were not goods or chattles even though their taking clearly represented a loss to the rightful owners.

How Serious Is Computer Crime?

The possibility that computer crime may be unique does not in itself constitute sufficient grounds for passing laws against it. Most Legislatures insist that the problem be of sufficient consequence to warrant study, public hearings, and only then the passage of a bill. How serious are computer abuses; for example, how common are they and how large are the damages when they occur?

Experts disagree over the pervasiveness, and therefore, importance of computer abuse [8,9]. Our knowledge of computer crime is extremely limited. There are less than 1,000 reported cases of computer abuse world-wide at the date of this writing, and this count is based on the broadest

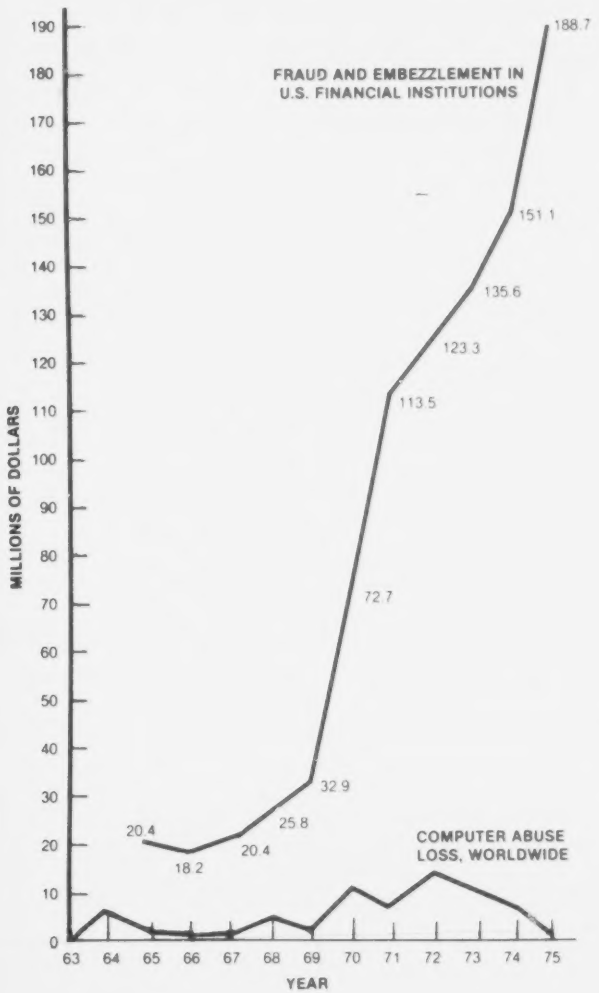
*Mark G. Simkin is Professor of Accounting and Information Systems, College of Business Administration, University of Nevada, Reno.

definition of computer abuse:[2] "Any intentional act associated in any way with computers where a victim suffered, or could have suffered, a loss and a perpetrator made, or could have made, a gain" [4]. Moreover, if we eliminate cases that may be prosecuted under existing laws for theft, embezzlement, fraud, etc., as well as the unusual cases involving student pranks and juvenile vandalism, less than 100 cases would probably remain.

Computer crime probably is much more prevalent than the statistics seem to indicate. They relate only to *reported* computer crimes that have been independently validated. It is not known how many additional computer crimes have gone undetected, or detected but unreported. In the United States, computers have been in use for over 30 years. There are presently over 200,000 computer centers, more than three million people are *directly* employed in the electronic data processing industry, and over five million microcomputers are in private homes and small businesses. These facts lead one to suspect that the number of reported cases of computer abuse is just the tip of an iceberg.

FIGURE 1

A Comparison of World-wide Computer Abuse with U.S. Fraud and Embezzlement in Financial Institutions



As we have already seen, computer crime is related to various types of fraud and embezzlement. Figure 1, which provides a graphical comparison of this relationship seems to suggest that computer abuse is a minor problem. But the figure conceals more than it reveals. Only *known* computer abuse is portrayed in the figure. If accurate data were available, there is every reason to believe that the two functional relationships would be more comparable.

Computer crime should be considered to be a major problem because of the magnitude of the average loss. For the cases that we know about, the average loss is $500,000, and this figure has been increasing over the last few years. If it is accurate, computer abuse would have to be classified as a very serious crime indeed.

The average computer crime loss of $500,000 is commonly quoted in popular articles on computer abuse but extreme care must be used in interpreting it. For one thing, losses are difficult to gauge because they typically include estimates of lost computer time and the labor costs involved in investigations and recovery procedures. For another, the $500,000 figure is derived from a biased sample of only known computer abuse—the true figure may be either higher or lower than that cited above.[3] Finally the average computer crime loss was computed without considering the following: (1) student computer abuses and pranks where monetary gain was not the prime motive, (2) certain "revenge" cases where, again, a monetary motive was lacking, and (3) spectacular cases such as the Equity Funding case, ($2 billion in losses, counting common stock losses) and the Stanley Mark Rifkin case, ($10.2 million stolen but all of it recovered at a profit). The inclusion of such cases would, of course affect the average loss.

Provisions of the Nevada Law

In passing a computer crime law, Nevada became the twenty-third state in the nation to pass a computer-related act. Because a large number of commercial computer systems involve networks that cross state lines, one would assume that there would be a federal computer crime law as well. The fact of the matter is that various sponsors have introduced a computer crime bill in Congress every year for the past five years, but the proposed legislation has never emerged from committee. Thus, the responsibility for computer crime legislation has fallen to the states.

The Nevada law is divided into three major sections: (1) a section defining such terms as: "computer," "data," "network," "program," "property," and "system," (2) a section describing the unlawful use of computer data, equipment, networks or property; and (3) a section describing the unlawful use of a computer to obtain confidential personal information, especially personal credit ratings.

The second section of the law defines specific misdemeanors involving computers. Among them are:

(1) A person who knowingly, willingly, and without authorization modifies, destroys, discloses, takes,

copies, or enters data, a program, or supporting documents, or

(2) A person who knowingly, willingly, and without authorization modifies, destroys, uses, takes, or damages computer equipment or supplies, or

(3) A person who knowingly, willingly, and without authorization destroys, damages, or takes a computer, system or network.

If the damage caused by these acts is in excess of $500 or affects governmental operations, public communications, transportation or utilities, the misdemeanor is punishable by imprisonment for one to five years and subject to a fine up to $100,000.

The third and final section of the law addresses certain types of computer disruptions and defines three types of misdemeanors:

(1) The direct or indirect denial of the use of a computer system or network to a person who has the right to its use;

(2) The unauthorized use of a computer system to obtain personal information about another person; and

(3) The entering of false information about another person to damage or enhance that person's credit rating.

If the above violations are committed as part of a scheme to defraud or to illegally obtain property, these violations are punishable as provided for in the second section, i.e., imprisonment for one to six years and a fine up to $100,000.

As it stands, the Nevada computer crime law parallels similar laws adopted in other states but is more comprehensive than most. The inclusion of the word "copies" in the second section, for example, is unique to such laws and guards against "valuable information computer crime" — e.g., the copying of sensitive data, such as the bidding plans of a construction company. Similarly, the inclusion of the word "enters" in the same section guards against the *addition* of false information — an act clearly not prosecutable as a theft.

A particularly interesting portion of the Nevada law is found in part (2) of the third section, which makes it illegal to obtain without authorization, or to falsify, a person's credit information. This provision was not in the original bill but was added later. Although its intent is probably covered in the earlier sections of the law, it is of special relevance to Nevada's casinos, where well over half of the gambling at some of them is conducted on credit.

A final point to note about the Nevada computer crime law is the stiff maximum fine of $100,000 for violations. This is not the largest penalty provided for in the Nevada Statutes (Section 199.220 on racketeering and Section 453.3385 on drug trafficking, for example, provide for potentially higher penalties) but is one of the stiffest penalties for computer abuse in comparison with the penalties for similar offenses in other states.

In the initial draft of AB 133, the maximum penalty was $5,000. When the assembly committee learned that the average loss in known computer abuse cases is in excess of $500,000, the maximum penalty was increased substantially. Even now, however, some would argue that it is not high enough.

What the Nevada Law Omits

Despite its relatively broad scope and seeming comprehensiveness, the Nevada law is not perfect. Nevada needs a computer crime prevention law, even if it is imperfect. Nonetheless, some observers would argue that a number of desirable features are lacking. A few of these are described below.

(1) *There is no requirement for self protection.* An important aspect of civil law relates to actions of self protection. The concept of self protection is relevant to computer crime because many business systems support remote access ("dial-up") to their computer systems through common telephone lines and modems.

The problem with remote-access systems is that they can be accessed from geographically distant locations by unauthorized users. It seems proper to require the owners of such systems to exercise reasonable care in protecting their systems from harm. If they fail to exercise such care and a third party is harmed as a result, it is likely that in a civil trial the court would find the company guilty of contributory negligence — a legal concept which, to the author's knowledge, has not been tested in computer crime cases.

The owners of sensitive computerized data—banks, medical entities, credit bureaus, for example — have an ethical obligation to protect their systems from unauthorized use. The law should make their failure to do so a criminal offense. The framers of the original Nevada bill attempted to address this matter by including a section on operational responsibility for a computer system or network. The passage in the draft copy of the bill established responsibility for (1) reasonable physical security, (2) techniques for controlling the processing of, and access to data, for the checking and reporting of potential hazards and risks to the user, and (3) the protection of data while it is being collected, validated, processed, controlled, and distributed. It was recommended that this passage be deleted on the grounds that it would be difficult to enforce and vague as to what would constitute "reasonable care." Thus, the present law has no provision for self protection.

(2) *The law does not create any special agency or training for investigators or prosecuters.* The good news is that the new law will not cost the taxpayers more money. In theory, none is needed for no new expenditures are mandated by the law. The bad news is that the state will have to rely upon existing personnel and resident expertise to investigate, document, and prosecute cases under the new law. Although a surprisingly large amount of computer abuse involves little more than altering computer input data, there is still a number of other activities that involve the sophisticated tampering with computer access codes, data files, and programs. These cases will require a level of expertise not presently available in the offices of the district attorneys. How well these offices will do in prosecuting

cases relying almost solely on expert testimony is speculative.

(3) *The law does not require reporting.* Nevada law makes it a misdemeanor to leave the site of an automobile accident or to fail to report one. No similar provision is found in the present computer crime law. There is no compelling reason for a business to report a computer abuse, even if it is prosecutable under the present statute.

The matter of reporting is important in the area of computer abuse because of the natural hesitancy for private firms to report such matters to public officials. This is true even when the abuse involves substantial losses to the victimized organization. The desirability of mandating compulsory reporting must take a great deal into consideration, including: (1) the privacy of the victimized organization, (2) the potential civil as well as criminal nature of computer abuse, (3) the adverse publicity that, to many businesses, may ultimately be more costly than the crime itself, (4) the civil rights of the perpetrator, (5) the needs of an informed public, (6) the fear of a sky-jack syndrome—i.e., that a crime, once reported, will encourage others, and (7) the benefits to other organizations when full disclosure allows them to protect themselves from similar abuses.

The matter of compulsory disclosure is a hotly debated issue in the literature and the experts disagree as to its desirability. As a practical matter, the public has learned most about those computer abuses that have transpired in public or heavily-regulated industries — e.g., educational institutions and banks. A large number of computer abuses go unreported and, worse, unpunished. The present law is silent on the issue of public disclosure.

Conclusion

Despite the fact that computer crime is difficult to define and legislate against, there are compelling reasons for a state such as Nevada to have a computer crime law. Among them are: (1) the absence of any federal legislation dealing with computer crime; (2) limited evidence suggesting that computer crime is a serious matter, (3) the fact that Nevada's principal industry, gaming, is highly dependent upon computerized credit information, and (4) the protection desired by the very high-tech industries Nevada hopes to attract to the state in order to diversify its economy.

In passing its own law, Nevada became the twenty-third state in the nation to legislate a computer-crime bill. Whether the wording of the law is comprehensive enough to facilitate the prosecution of most violators, or the penalties of the law are stiff enough to deter undesirable activities, remains to be seen. As of the date of this writing, neither the state Attorney General's office nor the district attorney's offices in Clark County or Washoe County had prosecuted a single offense under the new law.

Footnotes

[1]217 Va. 688, 232 SE 2nd 745.

[2]This is the Stanford Research Institute (SRI) definition.

[3]The statistical likelihood of this average being off by as much as an order of magnitude, however, is very small.

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Recognition of Ethical Premises in Decision-Making: A Typology

*By Donald L. Gaymon**

The author develops the idea that individuals in business roles approach decision-making with different ethical premises in deciding among alternatives. The article highlights fundamental differences in premises and suggests that understanding these differences has implications for mutual understanding and provides a means of living with ambiguity in the contemporary business environment.

One can hardly listen to the evening news or read a newspaper or any business-oriented publication without encountering some mention of ethical problems. Indeed, there seems to be almost a fixation in modern society on the individual's ability to meet the challenge of handling complex, ethical problems and dilemmas.

Most observers would agree that the frequency of discussions on business ethics is a positive feature of contemporary society. Approval is indicated by numbers of citations in academic abstracting services under such headings as "ethics," "business ethics," "values" and "personal values." The mention of ethics in the public media also has increased greatly over the past 25 years. Greater attention to ethics is a given, and so consciousness is raised to everyone's benefit.

Many reasons might be cited as to why ethical issues have become more critical today. One important explanation is that populations have grown and are more concentrated, and people simply have to deal with each other more frequently. In the past an individual could minimize contacts with other people, thus avoiding ambiguous ethical problems, but now life is made up of constant human encounters, and as a consequence, concern over ethical questions is accentuated. A second explanation for the greater concern over ethical issues today is that the stakes are higher. With our economically based social structure, costs incurred by victims of unethical behavior can be exceedingly large. Computer fraud, for example, costs consumers billions of dollars each year.

Many Voices

One of the difficulties encountered when a topic begins receiving a great deal of public attention is an inclination for the discussion to go off in many directions at once. Many are interested, but people are interested in different facets of the problem, resulting in a whole panoply of discussions, usually having few connections and very rarely bound constructively together. People talk about the declining (or rising) level of ethical behavior, the impossibility (or the possibility) of translating ethical judgments from one culture to another and the need for (or uselessness of) statements of ethical expectations for particular professions. Some find these varying discussions interesting and valuable, but they are also frustrating because coherent progress toward understanding does not seem to be occurring.

In order to avoid adding just one more source of noise to the cacophony surrounding the ethical discussion, it is imperative that intentions and definitions be clearly specified. Consequently, our discussion is descriptive rather than prescriptive, focusing on how the world is rather than on how it should be. Specifically, the focus is on ethical premises manifest by individuals as they decide among alternatives in situations where there are issues of *right* and *wrong*. The intent of the discussion is to develop a description of the world, using dependable categories. The value of a study of types lies is its capacity to help organize understanding of why people act as they do, and why people making equal claims regarding the ethical issues in a particular situation may come to totally opposite conclusions.

Definitions and Assumptions

One critical element in discussions of ethics is clarity of terms. While people may *say* the same thing, they may not *mean* the same thing. Therefore, before launching into a discussion of this particular typological system, it is important to establish some groundwork, a set of definitions and parameters.

The term "ethics," as used in this essay, refers to judgments about the "rightness" or "wrongness" or "goodness" or "badness" of particular behaviors. Ethics are behaviorally oriented, assessing actions or behaviors, not intentions. While contradictions between intentions and results are important, such considerations are not at issue here. As used in this paper, ethics and morality are synonyms, for both refer to judgments about behaviors.

Ethical premises, then, are systems people develop for deciding between possible alternatives. When a question comes along—for example, "should we include more infor-

**Donald L. Gaymon is Associate Professor of Business Administration, School of Business and Economics, Whittier College, Whittier, California.*

mation on performance characteristics in this advertising campaign"—ethical premises are approaches used to evaluate alternatives. Since ethics are derived from values, these ethical premises actually occupy the boundary position between values and ethics. The individual's inner voice says: "a good person decides among possible courses of action on these bases. Since I want to see myself as a "good" person, I will apply these premises when I decide."

The focus of this discussion will be on *individual behaviors*. Ethics are predominantly individual in their orientation. While it is reasonable to discuss collective or institutional ethics (for example, one could ask if a company's system of remuneration is ethical), this paper deals with how individuals act, and the typology will categorize what individual people do when they are facing ethical dilemmas.

Next, in terms of definition and clarification, this discussion is concerned with *business ethics*. Persons do not have separate beings they can turn on and off when in one context or another; an individual is the same person with family, on the golf course and at work, so individual ethics are total ethics. Nevertheless, it is both possible and reasonable to think specifically about some particular context in which individuals make decisions. Being in an organization conventionally labeled a "business" does establish an identifiable context containing a set of unique features. Thus this discussion will focus on a business context.

Finally, this essay assumes that most managers wish and intend to act in ethical ways. While there are those who are intentionally unethical, judging that the benefits of immorality are sufficient to offset the personal discomfort and social reprobation connected therewith, such individuals are a small minority.

A Typology of Premises

Suppose two managers are facing the same question: "should I award this contract to my friend's company even though it has not submitted the lowest bid?"—and make opposite decisions. Both will claim to have made their decisions based on what is ethical. How can this be?

There are two essential ways managers look at ethical dilemmas. One focuses on the assumption that ethical decisions are based on outcomes or consequences. In the example cited above the manager would ask: "what will be the results if I do—or do not—award this contract to my friend? After all, the difference between the low bid and my friend's bid is only a few dollars." This approach or typology will be labeled the "consequential premise." These managers resolve ethical questions by measuring and evaluation—to the best of their ability—consequences.

The approach used by the other manager noted in the example above can be labeled as the "non-consequential premise." This manager is horrified that one would even give consideration to awarding the contract to the non-low bidder (assuming competency on the part of the low bidder). After all, it is company policy and simply good business to go with the winner. This manager would eschew justification in terms of possible long-term benefits, and would not even think in terms of friendship having certain benefits in the marketplace. For individuals operating with this worldview, acts themselves are simply *right* ways of behaving or *wrong* ways of behaving, and if one begins to offer rationalizations then one is merely clouding the ethical question.

On the surface these two types are readily discernible, and one can see how individuals might make different decisions. Most managers will have fairly strong feelings about which approach is *right* for the business world and which manager is more likely to be successful. Of interest, however, is the fact that different people, functioning from different premises, will fail to see how their arguments and logic are totally dependent upon these premises. Examples will be useful.

The Foreign Currupt Practices Act has had a controversial evolution since its 1977 passage. The act prohibits companies engaged in international trade from paying off officials in foreign countries in order to acquire or keep business. The law also requires that companies provide internal systems of control so they will be able to discern whether local representatives are, in fact, engaging in practices prohibited by the regulation.

The primary incentive for passage of the Foreign Corrupt Practices Act was the disclosure of company practices through the Watergate procedures. People were outraged to discover that representatives of businesses based in the U.S. were adopting competitive practices which were contrary to accepted modes of behavior. Subsequent to its adoption, however, the law itself has become somewhat controversial. Critics argue that the United States cannot impose its standards of morality on other countries; that the practice of paying off officials in order to receive "consideration" may be relatively harmless because it is generally known that this is a commonplace procedure; that it is useless for U.S.-based firms to refuse to engage in these practices because that refusal will not change the situation whatsoever — it will merely allow firms headquartered in other lands to achieve competitive advantage since they will go ahead with their bribes to officials (oftentimes sneering at the U.S. for its "holier-than-thou" attitude), it is presumed.

Arguments that the Foreign Corrupt Practices Act should be repealed are based on a consequential view of ethical decision-making; i.e., decisions should be made on the basis of outcomes or consequences. Proponents of this position compute the costs and benefits of having the law in place, and deem that the costs are greater than the benefits. Loss of business revenues is not offset, in this view, by increased goodwill or greater inclination for business decisions in those countries to be made on only economic grounds. As a result, this view holds that it is not unethical for businesses to participate in whatever "payoff" system prevails in different countries.

Another example of a consequential approach to ethical decision-making is the rather popular argument of Albert Carr regarding bluffing in business.[1] Carr contends that operating a business is akin to playing poker. In a card game individuals do not reveal what cards they do or do not have. Carr argues that exactly the same rules hold in commerce, and that if an individual would attempt to compete in

business on some other grounds, not only would it be inappropriate, it would also cause undo stress for the person. One cannot, according to Carr, operate in business with a set of rules applicable in personal relations or in other walks of life. He is saying that what one will do to bluff through a business transaction to his or her advantage should be determined by the consequences. Thus one does not reveal the absolute minimum selling price of an item, but rather makes every attempt to have it appear that some higher price is the "rock-bottom" price. Consequences redeem what, in other circumstances, might be considered cheating, or even lying.

One final example of an area where arguments tend to polarize regarding ethical behavior, is capital investment by businesses in South Africa. Contentions on both sides are well known but the essential position of those who defend continuing investment despite South Africa's apartheid policy is that the results are to the eventual benefit of the black population. Pulling out would only make their situation worse, since fewer jobs—presumably ones with better opportunities—would then exist. Again, the critical premise is that this ethical question is to be settled on the basis of a cost/benefit analysis of outcomes.

The alternative approach to making decisons in the ethical realm is not premised on the idea that *wrong* and *right* will be determined by assessing whether net benefits outweigh net costs. Rather, this approach is premised on the idea that there are certain fundamental requirements of behavior placed on human beings. Adhering to these requirements is being ethical, and not adhering to them is being unethical. Acts or behaviors themselves are the critical consideration, not outcomes or consequences.

Applying this premise to ethical decision-making leads to different conclusions than if one were basing decisions on consequences. In the case of the Foreign Corrupt Practices Act, the "non-consequential" premise contends that net payoff to U.S.-based businesses is quite irrelevant to consideration of whether a behavior in the international marketplace is ethical or not. There ought to be some basic level of civility on the part of the acting party, no matter the response or desire of the other participant. An actor is obliged to behave in ways that express the highest level of civilized interaction known, and it is not civilized to bribe an official or to seek to gain advantage over competitors on bases other than quality of product or service. An observer could state that the violations prohibited by the Foreign Corrupt Practices Act are truly unethical because they exhibit an absence of civility on the part of the practitioner. Cost or benefit of the outcomes is not the question.

Analyzing Carr's views from a "non-consequential" perspective, rather than discounting the importance of not telling all that is known regarding available prices, or exaggerating the desirability of a particular product on the basis that everyone expects transactors of business affairs to obtain what advantage they can, it may be argued that integrity requires fair representation, telling the whole truth. It is not so much a matter of another's expectations as it is a sense of "rightness" from the actor's perspective. Acting with integrity is indifferent to the evaluation of the external viewer. Consequently, bluffing is unethical because it violates the actor's integrity despite the fact that it may not be harmful.

Finally, in what may be the most difficult or complex case concerning investing in areas such as South Africa, where practices not only violate the actor's perceptions of acceptable behavior but also may have a net positive payoff in terms of consequences, questions can be raised regarding an actor's honor. With apartheid, for example, individuals may feel that its concept of political order is so reprehensible that to support it in any manner violates their sense of honor. The support of apartheid would be so dishonorable, in the actor's view, that it would be unethical even if the oppressed group wishes for investment to continue.

One additional "non-consequential" approach to making ethical decisions, closely related to integrity and the sense of honor, is something like pride of craftsmanship. There is much discussion today regarding quality—American-made automobiles are contrasted with foreign-made ones, for example. Business decisions continuously involve qualitative dimensions, and with the complex kinds of products in the marketplace today it is not difficult at all to trade-off one kind of quality for another. Like the craftsman of old, however, some individuals involved in commerce have a perspective which says that even if diminished quality has no negative consequences in terms of personal or social benefit, quality of product or service must be maintained. "These goods or services represent me, and I shall make them as good as they can be."

Implications

The foregoing discussion demonstrates how differing ethical premises lead to different judgments regarding what is actually ethical behavior. These are not cases where one party or the other simply says that it is not an ethical question or that ethics are unimportant; rather here proponents of opposite behaviors are contending equally that their recommended courses of actions are ethical. Given this contradiction and the difficulty generated in the business community by the contradiction, what are the implications? Is there any way to solve the dilemma?

To the last question, the answer must be "no." Given such different perspectives, persons concerned about the ethical level of decision-making in business are not likely to be able to find any final way of resolving these differences. Concurrence will not be achieved through discussion.

However, the impossibility of resolving differences in premise does not necessarily suggest that no action is possible. Certainly the recognition of different premises is a basis for some kind of movement toward at least dealing more openly. Three implications seem apparent.

First, simply recognizing that these differences exist at the level of premise regardng ethical decision-making should improve mutual understanding. When two managers argue over whether it is ethical to accept a case of Scotch from a supplier during the holiday season, or when a businessperson and a critic disagree on whether additional investments should be made in a particular nation, they can at least

perceive that the alternatives are based on ethical premises. While this increased understanding may not alter judgments and decisions, it will help people to get past the stage of accusing each other of unethical behavior.

Second, clarification of ethical premises will contribute to an improvement in the formulation of codes of ethical conduct. More organizations today are publishing codes of ethical conduct as guidelines for employees. Those which develop and refine such codes of conduct need to understand that how they are presented and interpreted will be determined by the underlying premises of those involved. Some recognition of this fact, perhaps included in the code of conduct itself, will benefit all users.

Third, understanding the role of differing premises in ethical decision-making may make it easier for individuals to live with the ambiguity of decision-making in contemporary business affairs. Carr says that if one attempts to apply the ethics of friendship in a situation calling for the ethics of business transactions, the individual will experience great and perhaps unmanageable stress and contradiction. But if one can understand that both alternatives could be considered ethical, given different premises, then at least the individual is provided some grounds for either living with the ambiguity or revising his or her basis for behaving. Thus the individual who feels uncomfortable in not revealing performance limitations for a particular product might (1) insist on telling both the positive and negative aspects, (2) decide to go into another line of work or (3) conclude that the ethical apprehension was inappropriate, given the nature of the competitive world, and gain comfort in acting according to acceptable norms of the marketplace. At least this recognition of the role of ethical premise expands options for the decision-maker.

Conclusion

This discussion has developed the idea that individuals in business roles approach decision-making with differing ethical premises in deciding among alternatives. It has been suggested that a typology which distinguishes among those who primarily base decisions on consequences and those who do not is useful for understanding how people behave in business roles. Because of differences in premises, individuals often have difficulty in understanding that others are genuinely trying to find ethical solutions to problems. This essay highlights fundamental differences and suggests that understanding these differences has certain implications for mutual understanding, the development of codes of ethical conduct in business, and provides a means of living with ambiguity in the contemporary business environment.

Footnote:

Albert Carr in *Harvard Business Review*, Vol. 46, no. 1, Jan.-Feb. 1968.

Product Promotion, Usual Round of Price Increases Not Materializing in Current Economic Recovery

Atypical Recovery Spurs Emphasis on Improving Productivity Performance

WASHINGTON, D.C., May 17 — While the current recovery of the U.S. economy from the 1981-82 recession has continued strongly, it hasn't been "business as usual" for business, according to Coopers & Lybrand, one of the Big Eight accounting, tax and management consulting firms.

"Gross national product has grown at unexpectedly high levels and job creation has proceeded at a record rate," says Grady Means, director of Coopers & Lybrand's International Business and Productivity Analysis Group.

"Yet, something is profoundly different about this economic recovery as compared to others. If the past were consistently prologue, manufacturing concerns would now be aggressively promoting their products and raising prices. That's not happening," claims Mr. Means, who explains that competitive pressures are making these companies hold the line on prices and roll back prices that meet strong market resistance.

He notes that this new environment has forced manufacturers to review fundamentals of their operations, looking for efficiencies that will keep them competitive.

"In many cases, this search has taken executives back to the plant floor to find better and less expensive ways to make their products," says Mr. Means. "Financial and market analyses are still important, but companies are looking for ways to improve the productivity of operations and to ensure that labor, capital and materials all contribute productively to the process. It suggests an interesting new role for CFOs."

New Competitive Environment

According to Robert Avila, also with Coopers & Lybrand's International Busness and Productivity Analysis Group, the new competition and consumer price resistance are the result of:

- the low inflation rates in the U.S. economy — down from the double-digit levels of the late '70s and early '80s;
- the strong U.S. recovery presenting us as one of the few robust markets for less developed countries to sell and earn foreign exchange to pay off their external debt;
- a general increase in foreign competition, coming from all sections of the globe; and
- the added dimensions of high-quality and sophisticated products from foreign competition.

Mr. Avila says that various economic factors are driving up costs in uncharacteristic ways.

"The work force demographics of the baby boom and fewer college graduates are leading to worker shortages in key skill areas and to higher costs for pension and health care benefits. These factors will eventually drive up labor costs and, in general, contribute to the cost/price phenomenon that squeezes profit margins for U.S. industries," he explains.

"These intensely competitive forces, such as the recent price resistance in the tire industry, are likely to become commonplace in the marketplace for the remainder of the decade," asserts Mr. Avila.

Pinched profits in this new climate are sending executives back to the basics of reexamining their costs. According to Mr. Avila, experience has shown that across-the-board cost cutting and austere budgets aren't answers, because high-quality labor and capital equipment are needed to produce competitive products. So attention has turned again to productivity improvement.

He notes that during the mid-'70s, productivity was considered in the broadest terms. Frequently, solutions such as the Japanese-inspired "quality circles" were introduced without a thorough diagnosis of the problem.

According to Mr. Means, a number of new manufacturing improvement programs are available, including inventory control systems, manufacturing diagostics, planning and control systems, and production and information control systems. A recently developed technique, "value-added analysis," in the field of manufacturing performance measurement, addresses the need for productivity diagnosis.

"The advantage of this technique is that it provides specific information to manufacturers and CFOs on the actual productivity of workers, equipment and other factors of production," he says. "Those physical production measures can then be altered in ways that will affect bottom-line financial performance."

Mr. Means claims that whether you select value-added analysis or some other means to help improve manufacturing performance, knowing how the physical production measures relate to overall performance is essential.

"Any factor in your production that isn't a positive one is a drag-anchor slowing you down in the race against competitors. You need to make each factor work for you," he concludes.

Source: Coopers & Lybrand, New York, N.Y.

International Consultant Says U.S. Firms and Government Must Change Strategy to Compete Effectively in World Markets

PRINCETON, N.J., May 7 — Japanese businesses utilize robots and advanced automation devices as much as four times more than U.S. firms and have invested five times more in advanced automation research, an international consultant told a New Jersey high technology meeting this week. In addition, he suggested that manufacturing will become a key corporate strategy as companies will choose to become more manufacturing-led rather than market-led as they have in the past.

Dr. Anthony Warren, Chief Executive of PA Consulting Services, Inc., Princeton, N.J., said "U.S. corporations, never in the past had to face significant global rather than domestic competition. Recently, we have all been mystified with the Japanese corporate culture which is so attuned to detail, and the integrated team approach that can lead to early success in automated manufacturing. We are now finally realizing that there is nothing particularly clever about what the Japanese have done," he said, "except that they seem to have gotten a good jump on us first."

Dr. Warren spoke at a meeting sponsored by the New Jersey Business and Industry Association in Atlantic City where N.J. Senator Lautenberg and Treasury Secretary Regan were also planning to participate.

Dr. Warren, whose firm maintains offices and laboratories in 22 countries throughout the world, said that despite a late start, the U.S. has several inherent advantages that if properly utilized could make a major difference in its future competitive stature. Among them: a large domestic market, an abundance of natural resources and leadership in key technologies.

"Structurally," he said, "automation technology is shifting from first applications, which were materials-handling oriented, to tool application and most recently to assembly operations, the latter requiring much more sophisticated technology " Warren classified automation technology into three areas: first generation, hard or fixed; second generation, programmable; and, third generation, intelligent programmable where the system is capable of making decisions based on various forms of input.

"The key third generation technologies," he said, "will be vision, sensors and computer architecture and systems integration. Most importantly," he added, "the U.S. currently has leadership in all these areas. We are currently in the middle of what has become 'the techno-cultural war' which must be won in order to preserve the manufacturing sector in this country."

Regarding financing, Dr. Warren said that "as much as I believe that government should stay out of commercial decision making, we must ask Washington to structure corporate tax laws to guide companies to make the correct investment decisions in this field. This includes improving tax credits for improved R&D expenditures, with particular emphasis on automation, and advantageous write-off rates and possible credits for investments in advanced manufacturing plants. Recent savings plans, IRA's and the like, are creating a substantial source of long-term funds. What the government has not yet put in place," he said, "are the necessary incentives to funnel these funds into the manufacturing sector and away from government spending."

Dr. Warren also pointed out that:

- The costs to be a supplier in the automation business are increasing and we can expect a continuation of joint ventures, buy-outs and bankruptcies.
- The market is maturing and becoming more specialized. The general purpose machine or software will be gradually eroded by market specialization and segmentation.
- Products will be designed for automation assembly and testing.
- There will be a splitting between focused and flexible manufacturing as it will always be better to use hard automation for very large runs.

With 90 offices in 22 countries, PA is one of the largest consulting firms in the world. More than 1,300 professionals operate offices and laboratories through its divisions in technology, management consulting, computers and telecommunications.

Source: PA Consulting Group, Princeton, N.J.

Sales of Major Retailers Top $150 Billions For 10.8% First Quarter Gain; L/F Index: 131

For the first time ever, sales of major retail sectors topped $150 billion in the first quarter of the year.

Actual sales were $150,509,000,000, according to Lebhar-Friedman, publisher of Chain Store Age Magazine and other retail publications, for a 10.8% gain over the previous quarter. The Lebhar-Friedman Retail Sales Index hit a high of 131, or 12 points over the previous year for all retail sectors.

The Lebhar-Friedman Retail Sales Index was developed with 1980 sales figures as the base. Auto sales are excluded. Reports will be issued for each quarter of the year. Current quarterly figures are through April 30.

Heaviest retail gains were in the durable goods area, reflecting the resurgence in home building, according to the L/F Retail Sales Index. The hardware and home center retail sector scored an increase of 21 index points, or 18.9% over the comparable quarter last year. The index for furniture, and home furnishings retailers jumped 19 points to 132.

Department stores led the gains in the non-durable goods retail sector, to hit 153 on the L/F Retail Sales Index.

The catalog retail group (Sears, Ward and Penney) were close behind at 143 on the L/F Index, the discount store group (including full line discount stores such as K-Mart and Wal-Mart) registered 143 on the L/F Index. However, discount stores continued to dominate the market share sales in general merchandise retailers with 10.9% of all sales, vs. 5.3% for department stores and 6.4% for Sears, Ward and Penney.

Drug stores scored 141 on the Index, or a 10% increase; while apparel and accessories scored 130 on the Index for an 11% gain for the quarter against the previous year.

Laggards in gains were the food stores, with an L/F Index of 125, compared to the overall Retail Sales Index of 131. This is seen as reflecting the drop in food prices for the period.

The increase for almost all categories reflects the modulation in new store expansion, trading off sales gains in favor of earnings gains. Thus capital expenditures are more typically reflected in existing store improvements, i.e., distribution systems that complete faster inventory replenishment, thereby reducing the expense of carrying longer-tenured stocks. Thus a resurgence of investment in existing stores has moderated the sales gains of the go-go expansion period but returned higher earnings from the reorganization of the company structure.

K-Mart, for example, reported a 30.1% gain in earnings during the first quarter on a sales gain of just 6.1%. Macy's increased earnings by 23.7% while its sales rose 16.4%. Zayre's products earnings gains of 59% on sales gains of 20%. The strategy among major retailers is to have the earnings curve surpass the sales curve.

Source: LEBHAR-FRIEDMAN, Inc., 425 Park Avenue, New York, N.Y.

Nevada Economic Indicators

Statewide Statistical Data

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
Total Labor Force (000's)	497.0†	496.2†	501.7	498.3	+ .1	+ 1.6
Total Employment (000's)	455.8†	455.0†	456.1	455.6	+ .2	+ 4.1
Unemployment (000's)	41.2†	41.0†	45.4	42.5	– 1.8	– 19.9
Unemployment Rate	8.3†	8.3†	9.1	8.6	– 1.5	– 20.9
Unemployment Rate (Seasonally Adjusted)	8.9†	8.4†	8.4	8.6	– 7.2	– 21.6
Agricultural Empl. (000's)	5.2†	4.1†	3.8	4.4	– 33.8	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	425.2†	424.6†	424.7	424.8	+ 1.1	+ 4.3
Mining	6.6†	6.6†	6.6	6.6	+ 1.5	+ 4.8
Contract Construction	23.8†	23.2†	22.9	23.3	– .4	+ 13.3
Manufacturing	18.9†	19.0†	18.9	18.9	+ 1.4	+ 4.0
Transportation & Utilities						
Transportation	13.0†	13.0†	13.1	13.0	+ 2.4	+ 1.8
Railroads	1.8†	1.8†	1.8	1.8	+ 0.0	+ 0.0
Air	2.7†	2.7†	2.7	2.7	+ 1.2	+ 1.2
Public Utilities	11.4†	11.3†	11.3	11.3	+ 2.1	– 4.2
Total Trade	84.4†	85.7†	87.3	85.8	+ 1.7	+ 5.4
Wholesale Trade	14.0†	14.0†	13.9	14.0	– 1.2	+ 2.4
Retail Trade	70.4†	71.7†	73.4	71.8	+ 2.2	+ 6.0
Finance, Ins., Real Estate	18.5†	18.5†	18.6	18.5	– .4	+ 3.3
Service Industries	190.1†	188.5†	186.9	188.5	– .6	+ 5.0
Hotels, Amusement and Recreation Combined	127.2†	126.3†	124.7	126.1	– 1.1	+ 7.0
Medical and Health	15.2†	14.8†	14.7	14.9	– 1.1	– 5.1
Total Government	58.5†	58.8†	59.1	58.8	+ 6.3	+ .1
Federal	9.4†	9.5†	9.5	9.5	– 2.1	– .4
State and Local	49.1†	49.3†	49.6	49.3	+ 8.0	+ .1
Education	21.5†	21.9†	22.2	21.9	+ 26.2	+ 3.8
Average Weekly Earnings in Selected Industries						
Mining	531.62†	535.99†	542.88	536.83	+ .6	+ 11.7
Construction	615.39†	555.75†	567.50	579.55	– .8	– 5.0
Manufacturing	356.32†	369.95†	362.88	363.05	+ 3.7	+ 8.0
Public Utilities	492.72†	491.24†	489.65	491.20	+ 4.5	+ 9.1
Trade	267.87†	269.51†	262.29	266.56	– .7	+ 2.8
Average Weekly Hours in Selected Industries						
Mining	42.7†	43.4†	43.5	43.2	– .4	+ 5.2
Construction	36.5†	33.1†	33.8	34.5	– 2.2	– .3
Manufacturing	38.9†	40.3†	40.5	39.9	+ 2.7	+ 5.2
Public Utilities	39.8†	40.2†	40.3	40.1	+ .2	+ .1
Trade	33.4†	33.9†	33.8	33.7	– 1.7	– 2.2
Average Hourly Earnings in Selected Industries						
Mining	12.45†	12.35†	12.48	12.43	+ .9	+ 6.2
Construction	16.86†	16.79†	16.79	16.81	+ 1.3	– 4.6
Manufacturing	9.16†	9.18†	8.96	9.10	+ 1.0	+ 2.7
Public Utilities	12.38†	12.22†	12.15	12.25	+ 4.3	+ 9.1
Trade	8.02†	7.95†	7.76	7.91	+ 1.0	+ 5.2
Construction Activity						
Residential ($000's)	107,500	53,100	32,000	192,600	– 13.2	+ 24.8
Nonresidential ($000's)	16,100	12,100	10,300	38,500	– 59.0	– 47.5
Nonbuilding ($000's)	11,000	16,300	26,900	54,200	– 35.5	+ 96.4
Total ($000's)	134,600	81,500	69,200	285,300	– 28.6	+ 11.8
# of New Dwelling Units	1,932	834	567	3,333	– 29.6	– 2.6

Statewide Statistical Data (Continued)

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
Banking Activities ($000,000's)						
Loans	2,243	2,209	2,176	2,209	+ 2.7	+ 3.9
Investments	835	824	849	836	+ 1.9	+ 40.1
Total Deposits	3,279	3,318	3,337	3,311	+ 1.1	+ 4.2
Demand Deposits	956	992	986	978	+ 3.4	+ 4.9
Time & Savings Deposits	2,320	2,319	2,346	2,328	+ .1	+ 3.9
Tax Collections ($)						
Liquor	1,219,732	1,253,388	919,488	3,392,608	+ 3.5	+ 7.7
Cigarette	968,432	1,500,337	1,481,426	3,950,195	+ 6.9	+ 16.7
Fuel	3,562,946	3,676,716	3,496,102	10,735,764	− 11.1	+ 1.9
Quarterly Taxable Sales ($000's)	–	–	–	1,868,228	+ 5.2	+ 13.8
Quarterly Gaming Revenues ($000's)	–	–	–	720,640	− 9.8	+ 20.2
Highway Traffic Flow						
17 Selected Stations (Avg. Daily)	112,680	96,446	88,735	99,287	− 24.0	+ 5.8

† Revised.

Las Vegas Standard Metropolitan Statistical Area

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
Total Labor Force (000's)	279.1†	279.3†	283.3	280.6	+ 1.0	+ 2.0
Total Employment (000's)	253.3†	253.9†	255.5	254.2	+ 1.3	+ 4.6
Unemployment (000's)	25.8†	25.3†	27.7	26.3	– 1.4	– 18.2
Unemployment Rate	9.2†	9.0†	9.8	9.3	– 2.8	– 20.0
Unemployment Rate (Seasonally Adjusted)	9.5†	9.2†	9.2	9.3	– 4.1	– 20.5
Agricultural Employment (000's)	.9†	.7†	.7	.8	– 32.4	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	239.6†	240.0†	240.9	240.2	+ 1.8	+ 4.9
Mining	.4†	.4†	.4	.4	+ 0.0	+ 0.0
Contract Construction	13.8†	13.6†	13.7	13.7	+ 1.5	+ 10.8
Manufacturing	7.0†	7.0†	7.0	7.0	+ .5	+ 8.2
Transportation & Utilities						
Transportation	7.8†	7.7†	7.7	7.7	+ 1.3	+ .4
Railroads	.7†	.7†	.7	.7	+ 0.0	+ 0.0
Air	2.2†	2.2†	2.2	2.2	+ 4.8	+ 1.5
Public Utilities	6.0†	6.0†	6.0	6.0	+ 2.3	– 2.2
Total Trade	48.1†	49.0†	50.1	49.1	+ 2.6	+ 6.2
Wholesale Trade	6.6†	6.7†	6.6	6.6	– 1.0	+ 4.7
Retail Trade	41.5†	42.3†	43.5	42.4	+ 3.2	+ 6.4
Finance, Ins., Real Estate	10.6†	10.7†	10.8	10.7	+ 0.0	+ 4.6
Service Industries	118.1†	117.7†	117.1	117.6	+ .5	+ 5.6
Hotels, Gaming & Recreation	78.6†	78.7†	78.2	78.5	+ .2	+ 7.0
Total Government	27.8†	27.9†	28.1	27.9	+ 7.4	– .5
Federal	4.9†	4.9†	4.9	4.9	– .7	– 1.3
State and Local	22.9†	23.0†	23.2	23.0	+ 9.3	– .3
Education	10.8†	10.9†	11.1	10.9	+ 30.2	+ 4.1
Construction Activity Las Vegas						
Residential ($000's)	8,214	12,067	6,475	26,756	– 32.7	+ 76.0
Nonresidential ($000's)	1,045	4,438	14,785	20,268	– 18.3	– 10.4
Total Value ($000's)	9,259	16,505	21,260	47,024	– 27.2	+ 24.6
# of New Family Units	338	486	172	996	– 31.5	+ 212.2
North Las Vegas						
Residential ($000's)	963	1,203	3,340	5,506	+ 47.2	+ 122.2
Nonresidential ($000's)	74	132	865	1,071	– 55.9	+ 46.1
Total Value ($000's)	1,037	1,335	4,205	6,577	+ 6.7	+ 104.8
# of Permits	46	56	47	149	+ 2.8	+ 7.2
Energy Consumption						
Sales (000's KWH)	391,045	420,560	474,487	1,286,092	– 30.6	– .8
# of Customers	212,394	213,311	214,296	213,333	+ 1.3	+ 4.3
Taxable Sales ($000's)	–	–	–	1,045,623	+ 10.9	+ 15.2
Gaming Revenues ($000's)	–	–	–	496,309	+ 1.1	+ 23.3
Air Transportation-McCarran						
Passengers (Arr. & Depart.)	941,342	862,697	698,988	2,503,027	– 1.9	+ 9.5
Cargo Enplaned (lbs.)	1,049,978	952,182	1,543,073	3,545,233	+ 31.8	+ 17.3
Cargo Deplaned (lbs.)	1,482,810	2,105,400	1,873,212	5,461,422	+ 14.1	+ 8.6
Highway Traffic Flow						
4 Selected Stations (Avg. Daily)	30,258	29,650	28,377	29,428	– 16.7	+ 5.6
Room Tax ($)						
Clark County	1,913,346	1,727,571	1,220,398	4,861,315	+ .4	+ 25.1
Las Vegas City	275,176	265,078	204,991	745,245	+ 3.4	+ 19.8
SMSA Total	2,197,430	2,003,343	1,433,199	5,633,972	+ .9	+ 24.6

†Revised.

Reno Standard Metropolitan Statistical Area

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
Total Labor Force (000's)	135.3†	135.4†	136.7	135.8	+ .3	+ 1.2
Total Employment (000's)	126.8†	126.4†	126.7	126.6	+ .3	+ 3.3
Unemployment (000's)	8.5†	8.9†	9.9	9.1	– 1.1	– 21.3
Unemployment Rate	6.3†	6.6†	7.2	6.7	– 1.5	– 22.1
Unemployment Rate (Seasonally Adjusted)	7.1†	6.8†	6.9	6.9	– 9.2	- 20.3
Agricultural Employment (000's)	.6†	.5†	.4	.5	– 34.8	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	118.7†	118.2†	118.2	118.4	+ 1.1	+ 3.7
Mining	.8†	.8†	.8	.8	+ 0.0	+ 33.3
Contract Construction	6.3†	6.1†	5.9	6.1	– 2.1	+ 22.0
Manufacturing	7.9†	7.9†	7.9	7.9	+ 1.7	+ 3.9
Transportation & Utilities						
Transportation	3.9†	3.9†	4.0	3.9	+ 3.5	+ 3.5
Railroads	.5†	.5†	.5	.5	+ 0.0	+ 0.0
Public Utilities	4.0†	4.0†	4.0	4.0	+ 1.7	– 4.8
Total Trade	25.9†	26.3†	27.0	26.4	+ 2.3	+ 4.9
Wholesale Trade	6.3†	6.2†	6.2	6.2	– 1.1	+ 1.1
Retail Trade	19.6†	20.1†	20.8	20.2	+ 3.4	+ 6.1
Finance, Ins., Real Estate	6.1†	6.1†	6.1	6.1	– 1.6	+ 1.7
Service Industries	47.1†	46.2†	45.5	46.3	– 1.3	+ 3.0
Hotels, Gaming & Recreation	31.8†	31.0†	30.3	31.0	– 1.5	+ 9.3
Total Government	16.7†	16.9†	17.0	16.9	+ 7.4	+ .2
Federal	2.8†	2.8†	2.8	2.8	+ 0.0	+ 3.7
State and Local	13.9†	14.1†	14.2	14.1	+ 9.0	– .5
Education	6.8†	7.1†	7.2	7.0	+ 24.9	+ 3.4
Construction Activity						
Reno						
Residential ($000's)	3,345	5,898	2,023	11,266	+ 4.1	+ 22.7
Nonresidential ($000's)	2,358	1,393	2,314	6,065	– 57.6	– 49.4
Total Value ($000's)	6,703	7,291	4,337	18,331	– 26.7	– 13.4
# of New Family Units	32	214	41	287	+ 70.8	+ 25.9
Sparks						
Residential ($000's)	1,673	1,198	1,017	3,888	– 24.2	– 7.1
Nonresidential ($000's)	528	621	1,880	3,029	– 92.5	+ 58.4
Total Value ($000's)	2,201	1,819	2,897	6,917	– 84.7	+ 13.4
# of New Family Units	39	26	26	91	– 40.1	– 9.0
Washoe County (Unincorporated)						
Residential ($000's)	7,965	4,045	1,994	14,004	– 13.5	– 29.5
Nonresidential ($000's)	1,528	956	1,937	4,421	+ 139.1	+ 46.1
Total Value ($000's)	9,493	5,001	3,931	18,425	+ 2.1	– 19.5
# of New Family Units	69	41	21	131	– 25.6	+ 33.7
Taxable Sales ($000's)	–	–	–	452,320	+ 1.5	+ 12.9
Gaming Revenues ($000's)	–	–	–	139,329	– 21.6	+ 13.9
Air Transportation-Reno						
Passengers (Arr. & Depart.)	234,789	229,117	232,747	696,653	– 4.3	+ 13.6
Cargo Enplaned (lbs.)	610,616	751,987	739,788	2,102,391	+ 35.9	+ 15.3
Cargo Deplaned (lbs.)	720,249	788,606	862,734	2,371,589	+ 19.1	+ 26.5
Highway Traffic Flow						
7 Selected Stations (Avg. Daily)	67,491	55,138	50,921	57,850	– 25.0	+ 6.7
Room Tax ($)						
Washoe County	96,556	65,391	42,642	204,589	– 33.0	+ 41.6
Reno	859,941	781,394	589,362	2,239,697	– 8.6	+ 25.3
Sparks	59,738	51,174	36,731	147,643	– 7.6	+ 36.8
SMSA Total	1,016,235	897,958	677,735	2,591,928	– 11.1	+ 27.1

† Revised.

Nevada Statistical Data by County

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
CARSON CITY						
Total Labor Force	20,570†	20,580†	20,760	20,636	– .5	– .0
Total Employment	18,740†	18,750†	18,680	18,723	– .2	+ 3.0
Unemployment	1,830†	1,830†	2,080	1,913	– 3.0	– 22.2
Unemployment Rate	8.9†	8.9†	10.0	9.3	– 2.5	– 22.3
Construction Activity						
Residential Value ($000's)	754	1,120	1,904	3,778	– 27.5	+ 244.7
Nonresidential Value ($000's)	665	1,203	103	1,971	– 16.6	– 1.1
Total Value ($000's)	1,419	2,323	2,007	5,749	– 24.1	+ 86.1
# of New Family Units	20	18	30	68	– 13.9	+ 580.0
Taxable Sales ($000's)	–	–	–	63,277	+ .4	+ 30.5
Gaming Revenues ($000's)	–	–	–	8,462	– 23.4	+ 9.4
CHURCHILL						
Total Labor Force	6,790†	6,650†	6,690	6,710	– 5.2	– .3
Total Employment	6,070†	5,940†	5,900	5,970	– 4.9	+ 4.0
Unemployment	720†	710†	790	740	– 7.1	– 25.3
Unemployment Rate	10.6†	10.7†	11.8	11.0	– 2.1	– 24.9
Construction Activity						
Residential Value ($000's)	257	232	162	651	– 60.0	– 19.1
Nonresidential Value ($000's)	298	291	3	592	+ 11.3	– 11.6
Total Value ($000's)	555	523	165	1,243	– 42.4	– 15.7
# of New Family Units	4	2	1	7	– 58.6	– 58.8
Taxable Sales ($000's)	–	–	–	17,389	– 2.7	+ 21.2
Gaming Revenues ($000's)	–	–	–	1,180	– 2.2	+ 14.5
DOUGLAS						
Total Labor Force	8,780†	8,640†	8,530	8,650	– 5.0	+ 2.3
Total Employment	8,250†	8,080†	7,880	8,070	– 5.2	+ 7.2
Unemployment	530†	560†	650	580	– 3.3	– 37.4
Unemployment Rate	6.0†	6.5†	7.6	6.7	+ 1.5	– 39.1
Taxable Sales ($000's)	–	–	–	47,108	– 18.6	+ 22.3
Gaming Revenues ($000's)	–	–	–	56,451	– 38.3	+ 15.9
ELKO						
Total Labor Force	13,150†	12,900†	12,930	12,993	– 4.5	– .3
Total Employment	12,370†	12,070†	11,870	12,103	– 5.2	+ 2.1
Unemployment	780†	830†	1,060	890	+ 5.5	– 24.6
Unemployment Rate	5.9†	6.4†	8.2	6.8	+ 10.8	– 24.4
Construction Activity						
Elko City						
Residential ($000's)	434	68	1	503	– 42.2	– 33.9
Nonresidential ($000's)	2,139	290	144	2,573	– 26.5	+ 70.1
Total Value ($000's)	2,573	358	145	3,076	– 29.7	+ 35.7
# of New Dwelling Units	11	3	0	14	– 30.0	– 26.3
Taxable Sales ($000's)	–	–	–	40,362	– 11.0	+ 13.8
Gaming Revenues ($000's)	–	–	–	12,666	– 31.5	+ 11.1
ESMERALDA						
Total Labor Force	400†	390†	380	390	– 4.1	– 22.5
Total Employment	330†	330†	330	330	– 2.0	– 22.0
Unemployment	70†	60†	50	60	– 14.3	– 25.0
Unemployment Rate	16.3†	15.5†	13.8	15.2	– 10.4	– 2.8
Taxable Sales ($000's)	–	–	–	1,717	– 47.5	+ 32.3
EUREKA						
Total Labor Force	800†	750†	740	763	– 13.9	+ 2.7
Total Employment	730†	680†	660	690	– 14.8	+ 10.1
Unemployment	70†	70†	80	73	– 4.3	– 37.1
Unemployment Rate	8.5†	9.6†	10.3	9.5	+ 9.7	– 40.0
Taxable Sales	–	–	–	4,158	+ 37.5	+ 71.2

Nevada Statistical Data by County (Continued)

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
HUMBOLDT						
Total Labor Force	5,330†	5,220†	5,260	5,270	– 8.4	– 5.3
Total Employment	4,850†	4,750†	4,690	4,763	– 8.7	– 3.3
Unemployment	480†	470†	570	506	– 5.0	– 20.8
Unemployment Rate	8.9†	8.9†	10.9	9.6	+ 3.3	+ 16.6
Taxable Sales ($000's)	–	–	–	27,376	+ 4.1	+ 44.1
Gaming Revenues ($000's)	–	–	–	2,124	– 24.5	+ 16.0
LANDER						
Total Labor Force	2,670†	2,610†	2,580	2,620	– 5.3	+ 2.2
Total Employment	2,440†	2,400†	2,370	2,403	– 4.0	+ 5.7
Unemployment	230†	210†	210	216	– 17.7	– 25.3
Unemployment Rate	8.5†	8.2†	8.3	8.3	– 11.3	– 26.7
Taxable Sales ($000's)	–	–	–	8,109	– 23.3	+ 1.7
Gaming Revenues ($000's)	–	–	–	273	+ 31.9	+ 24.7
LINCOLN						
Total Labor Force	2,660†	2,630†	2,640	2,643	– 2.5	– 14.0
Total Employment	2,480†	2,460†	2,460	2,466	– 2.1	– 8.4
Unemployment	180†	170†	180	176	– 7.0	– 53.5
Unemployment Rate	6.7†	6.4†	6.7	6.6	– 6.2	– 46.5
Taxable Sales ($000's)	–	–	–	1,974	– 19.9	– 11.4
LYON						
Total Labor Force	5,680†	5,570†	5,600	5,616	– 4.5	+ 6.7
Total Employment	5,140†	5,040†	4,990	5,056	– 4.6	+ 11.5
Unemployment	540†	530†	610	560	– 3.4	– 22.9
Unemployment Rate	9.5†	9.5†	10.9	10.0	+ 1.4	– 27.6
Taxable Sales ($000's)	–	–	–	11,468	+ 1.8	+ 12.6
Gaming Revenues ($000's)	–	–	–	340	– 11.7	– 2.3
MINERAL						
Total Labor Force	4,010†	3,950†	3,910	3,956	– 2.0	+ 8.2
Total Employment	3,750†	3,720†	3,700	3,723	+ 41.6	+ 11.8
Unemployment	260†	230†	210	233	– 15.7	– 28.6
Unemployment Rate	6.5†	5.7†	5.4	5.9	– 13.7	– 34.3
Taxable Sales ($000's)	–	–	–	5,303	– 10.4	+ 23.9
Gaming Revenues	–	–	–	1,173	– 22.7	+ 10.3
NYE						
Total Labor Force	3,680†	3,660†	3,670	3,670	+ 1.6	+ .7
Total Employment	3,470†	3,450†	3,440	3,453	+ 2.9	+ 4.9
Unemployment	210†	210†	230	216	– 15.6	– 38.1
Unemployment Rate	5.8†	5.8†	6.2	5.9	– 17.2	– 38.2
Taxable Sales ($000's)	–	–	–	17,491	+ .3	– 21.1
Gaming Revenues ($000's)	–	–	–	1,266	+ 10.6	+ 11.6
PERSHING						
Total Labor Force	1,970†	1,910†	1,940	1,940	– 6.3	+ .3
Total Employment	1,890†	1,830†	1,790	1,836	– 6.8	+ 3.0
Unemployment	80†	80†	150	103	+ 3.3	– 31.1
Unemployment Rate	4.2†	4.0†	7.5	5.2	+ 8.3	– 32.0
Taxable Sales ($000's)	–	–	–	3,173	– 22.5	– 16.1
Gaming Revenues ($000's)	–	–	–	204	– 29.2	+ 29.1

Nevada Statistical Data by County (Continued)

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	PERCENT CHANGE 4th Quarter-1982 4th Quarter-1983
STOREY						
Total Labor Force	1,390†	1,460†	1,380	1,410	– 1.2	+ 11.0
Total Employment	1,230†	1,300†	1,190	1,240	+ .3	+ 14.8
Unemployment	160†	160†	190	170	– 10.5	– 10.5
Unemployment Rate	11.6†	11.2†	13.5	12.1	– 9.7	– 18.4
Taxable Sales ($000's)	–	–	–	1,687	– 36.6	+ 42.4
Gaming Revenues ($000's)	–	–	–	399	– 54.9	+ 7.9
WHITE PINE						
Total Labor Force	4,690†	4,680†	4,860	4,743	– .6	+ 10.5
Total Employment	3,980†	3,960†	3,980	3,973	– .7	+ 9.8
Unemployment	710†	720†	880	770	– .4	+ 14.4
Unemployment Rate	15.2†	15.4†	18.1	16.2	+ .4	+ 3.4
Construction Activity						
Total Value ($000's)	384	214	676	1,274	+ 108.2	+ 287.2
# of Permits	17	15	18	50	– 45.7	– 29.6
Taxable Sales ($000's)	–	–	–	11,092	+ 2.5	+ 8.2
Gaming Revenues ($000's)	–	–	–	449	– 19.1	+ 5.6

† Revised.

Selected U.S. Economic Indicators

Consumer Price Index & Indexes of Selected Categories
All Urban Consumers
(1967 = 100%)

	October 1983	November 1983	December 1983	4th Quarter 1983	PERCENT CHANGE 3rd Quarter-1983 4th Quarter-1983	4th Quarter-1982 4th Quarter-1983
All Items	302.6	303.1	303.5	303.1	+ 0.8	+ 3.3
Food	292.9	292.5	293.9	293.1	+ 0.3	+ 2.3
Housing	326.8	327.0	327.4	327.1	+ 0.6	+ 2.6
Apparel and Upkeep	200.7	200.7	199.3	200.2	+ 1.3	+ 2.8
Transportation	305.0	306.3	306.3	305.9	— + 1.2	+ 3.6
Medical Care	362.9	364.9	366.2	364.7	+ 1.4	+ 6.7

Producer Price Indexes for Selected Commodity Groupings
(1967 = 100%)

All Commodities	306.3	305.6	306.0	306.0	+ 0.5	+ 1.9
Fuel and Power	672.7	667.1	662.1	667.3	— 0.9	— 5.1
Machinery and Equipment	287.8	288.1	288.8	288.2	+ 0.3	+ 2.4
Metals and Metal Products	310.7	310.3	311.4	310.8	+ 0.6	+ 3.2
Nonmetallic Mineral Products	327.9	328.9	329.2	328.7	+ 0.8	+ 2.3
Textile Products & Apparel	206.4	207.0	207.2	206.9	+ 0.6	+ 1.7

U.S. Labor Force

Civilian Labor Force (000's)	112,042	112,147	111,795	111,994	— 1.1	+ 1.2
Total Employment (000's)	102,659	103,018	102,803	102,826	— 0.1	+ 3.5
Unemployment (000's)	9,383	9,129	8,992	9,168	— 11.1	— 19.2
Unemployment Rate	8.4	8.1	8.0	8.2	— 9.9	— 20.5
Unemployment Rate (Seasonally Adjusted)	8.8	8.4	8.2	8.5	— 9.6	— 20.6

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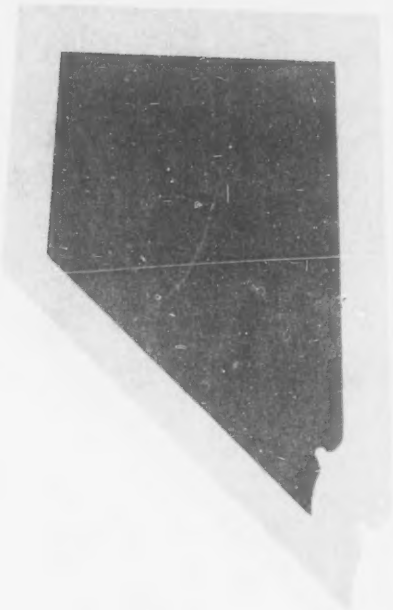

NEVADA REVIEW of BUSINESS & ECONOMICS

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The Tax Initiative and Improvement of the State Education System: A Survey of Public Opinion

*By Kyung-Il (Ed) Ghymn**

In order to determine public opinion on two major issues in Nevada, the tax initiative and improvement of the education system, the author conducted a survey of registered voters in Carson City, the state capitol. The goal of the survey was to determine the respondent perceptions of the importance of the aforementioned leading state-wide issues as well as perceptions of the relative importance of nine other items, such as local law enforcement, fire protection, industrial development, tourism development, etc. The eleven items and proposals are listed in Table 1.

METHODOLOGY

A structured questionnaire was formulated for the survey; the data were obtained by means of interviews by telephone. A total of 477 names was selected from the current Carson City list of registered voters by a systematic sampling process. The survey interviews were conducted during the period May 18 to June 9, 1984.

The distribution of the sample by area of Carson City and characteristics of registered voters was as follows:

Precinct	Number of Respondents**
Northwest Carson City — 7 precincts	81
Northeast Carson City — 16 precincts	170
Southwest Carson City — 6 precincts	47
Southeast Carson City — 14 precincts	170
TOTAL	468
Characteristics of Respondents:	
Sex:	
Men	197
Women	270
TOTAL	467
Age (years):	
18-24	23
25-39	99
40-54	129
Over 55	216
TOTAL	467

**The distribution of the sample size was based on the percentage of registered voters in each area.

The persons interviewed were asked to rate the importance of each of eleven issues on a scale of 1 to 5. A rating of 5 indicates that the respondent regarded the public service and/or proposal as very important and a rating of 1 signifies that the respondent regarded the issue as relatively unimportant.

In Table 1 the overall (composite) mean and rank of each of the eleven issues are listed. As indicated by the table, the respondents assigned *number one* priority to public works projects improvements (mean of 4.03). Law enforcement and fire protection were ranked second and third. Improvement of the education system was ranked fourth.

At the other end of the scale, apparently respondents were not impressed with the need for either *growth* of Carson City or the state-wide tax initiative, ranking these issues 11th and 10th, respectively.

In Table 2, the respondents' ratings of the same eleven issues are broken down by age category. The composite rank assigned to each of the eleven items by the respondents differs only slightly from those of Table 1. However, from Table 2 it is apparent that the perception of the importance of certain issues varies significantly with the age category. For example, the 18-24 years of age group assigned the high mean of 4.43 to Improvements of the Education System, compared with a mean of only 3.33 assigned by the 55 years and older category. Similarly, the 18-24 years of age group assigned a relatively high mean of 3.70 to recreation Facilities Improvement, while the 55 years and older group assigned a mean of only 2.78 to this item. The 55 years and older group apparently perceived the Tax Initiative as more important than other age groups did. It is also notable that the respondents in the youngest age category (18-24 years) assigned almost as high a priority to expansion and improvement of the Senior Citizens Center as did the 55 years of age and older group.

*Kyung-Il (Ed) Ghymn is Professor of Marketing and International Business, College of Business Administration, University of Nevada, Reno.

The author wishes to thank Dr. Albin Dahl for his assistance in writing this article and Chelsea Enterprises for financing the survey.

TABLE 1

Importance of Issues as Perceived by A Sample of Registered Voters

Proposal	Number of Responses	Mean	Rank
1. Downtown Redevelopment Issue	474	3.46	6
2. Fire protection	475	3.83	3
3. Growth of the City	477	2.89	11
4. Industrial Development	473	3.35	7
5. Law Enforcement	473	3.91	2
6. Public Works Projects Improvement	476	4.03	1
7. Recreation Facilities Improvement	476	3.03	9
8. Education System Improvement	474	3.69	4
9. Senior Citizens Center Expansion and Improvement	476	3.35	7
10. Tax Initiative	448	3.00	10
11. Tourism	474	3.51	5

TABLE 2

Importance of Issues by Age Category

Issues		Age Categories Years 18-24	25-39	40-54	55+	Composite Total	Rank
1. Downtown Redevelopment	means	3.57	3.40	3.24	3.57	3.46	6
	n	23	99	129	216	467	
2. Fire protection	means	3.70	3.87	3.81	3.83	3.83	3
	n	23	99	129	217	468	
3. Growth of the City	means	3.09	3.17	3.02	2.61	2.89	10
	n	23	99	130	218	470	
4. Industrial Development	means	3.18	3.45	3.41	3.26	3.35	7
	n	22	99	128	217	468	
5. Law Enforcement	means	3.68	3.90	3.82	3.99	3.91	2
	n	22	99	130	216	467	
6. Public Works Projects Improvement	means	3.96	4.02	3.98	4.09	4.03	1
	n	23	99	130	217	469	
7. Recreation Facilities Improvement	means	3.70	3.39	3.05	2.78	3.03	8
	n	23	99	130	218	470	
8. Education System Improvement	means	4.43	4.12	3.82	3.33	3.69	4
	n	23	99	129	216	467	
9. Senior Citizens Center Expansion and Improvement	means	3.52	2.98	3.21	3.58	3.35	7
	n	23	99	130	217	469	
10. Tax Initiative	means	3.00	2.69	2.69	3.30	3.00	9
	n	22	93	123	203	441	
11. Tourism	means	3.13	3.41	3.55	3.55	3.51	5
	n	23	99	130	215	467	

*n = number of responses

Table 3

ANOVA Result: Importance of the Tax Initiative Issue as Perceived by Age Group

Source of Variation	Sum of Squares	d.f.	Mean Square	F-Ratio
Treatment	39.03	3	13.01	5.28*
Error	1076.89	437	2.46	
TOTAL	1115.92	440		

*Significant at $\partial = 0.01$

Analysis of variance (ANOVA) tests were run for the two issues affecting the entire state, i.e., the tax initiative and improvement of the education system. The tables indicate the statistical significance of the mean responses by age group: significant at $\partial = 0.01$ (Table 3) relative to the tax initiative and at $\partial = 0.01$ (Table 4) relative to improving the state's education system.

In Table 5 the survey results are broken down by sex category. As indicated by the table, women respondents attached more importance to a number of the items listed than did the men respondents, e.g., law enforcement and

Table 4

ANOVA Result: Importance of the Education System Improvement as Perceived by Age Group

Source of Variation	Sum of Squares	d.f.	Mean Square	F-Ratio
Treatment	61.60	3	20.53	11.58*
Error	820.76	463	1.77	
TOTAL	882.36	466		

*Significant at $\partial = 0.01$

public works projects, recreational facilities, and education system improvements.

ANOVA tests for men/women group opinion differences were also made regarding the tax initiative and education system improvement issues. A statistically significant difference between responses of men and women was found relative to the education system issue. The women group was more concerned about the state's education system than were the men respondents. However, an ANOVA test indicated no statistically significant difference in the men/women perception of the importance of the tax initiative.

Summary and Conclusion

The survey results suggest that the public, on the average, is willing to support measures to improve the state's education system. The results also suggest that the public is responding poorly to the tax initiative.

Other notable findings of the survey are the following: (1) There is a significant difference in opinions among the age groups regarding the tax initiative v. the education system improvement issue. The younger groups (18-24 and 25-39 years) rated the education improvement the most important issue. The middle/upper middle age groups (40-54 years) rated education as the second most important issue, but the oldest age group (55 years and older) placed education in seventh place in order of importance. (2) The senior citizens group gave higher scores to the tax initiative in sharp contrast to the perceptions of other age groups which placed the tax initiative at (or near) the bottom of the list of issues measured.

The conclusion and inferences which may be drawn from the findings of the study are subject to the usual *caveat*: they are based on the responses of a sample of registered voters at one location, viz., Carson City.

TABLE 5

Importance of Issues by Sex Category

Issues		Sex Category Men	Sex Category Women	Composite Total	Rank
1. Downtown Redevelopment	means	3.23	3.60	3.46	6
	n	197	273	470	
2. Fire protection	means	3.68	3.93	3.83	3
	n	195	276	471	
3. Growth of the City	means	3.06	2.74	2.89	10
	n	197	276	473	
4. Industrial Development	means	3.41	3.31	3.35	7
	n	195	274	472	
5. Law Enforcement	means	3.62	4.11	3.91	2
	n	196	273	469	
6. Public Works Projects Improvement	means	3.84	4.17	4.03	1
	n	197	275	472	
7. Recreation Facilities Improvement	means	268	3.29	3.03	8
	n	197	275	472	
8. Education System Improvement	means	3.39	3.91	3.69	4
	n	195	275	470	
9. Senior Citizens Center Expansion and Improvement: Importance	means	3.22	3.43	3.35	7
	n	197	275	472	
10. Tax Initiative: Importance	means	3.05	2.95	3.00	9
	n	190	254	444	
11. Tourism: Importance	means	3.59	3.44	3.51	5
	n	196	274	470	

*n = number of responses

The Evolution of Casino Gambling in Alberta*

*By Colin S. Campbell and J.Rick Ponting***

Since World War II, the economy of the state of Nevada has grown increasingly dependent on its legalized casino gaming industry. Other states and jurisdictions have been reluctant to legalize casino gambling because of the perceived costs those casinos might create, such as increased political corruption, higher crime rates, and other social damage. However, the past fifteen years have been marked by a major trend toward legalization of various forms of gambling, including lotteries, off-track-betting, jai alai, and casinos in Atlantic City. But the way in which gambling is made available in any jurisdiction is usually affected by the views of lawmakers with respect to how commercial gambling can best be designed to create benefits for society, while at the same time minimizing the potential social problems. This has led to some interesting hybrids of legal gaming industries in the U.S. and Canada.

The following article describes the evolution of the "charitable casino" industry in the Province of Alberta, Canada, and provides an illustration of the process by which legal casinos might spread into other North American jurisdictions.

Exerpts:

. . . Section 190(1)(c) of the Criminal Code [of Canada] permits provincial governments to license charitable or religious organizations to conduct and manage a *lottery* scheme in their province if the proceeds from the lottery are used for charitable or religious purposes.

. . . the government . . . continued its liberal interpretations of the phrases 'lottery scheme,' 'charitable or religious organization,' and 'charitable or religious object or purpose' in Section 190(1)(c) of the Criminal Code of Canada. Under that interpretation a vast array of cultural, community, medical, sport, and educational associations have qualified as 'charitable or religious' organizations and about 450 casino licenses are now issued annually.

One of the key regulations is that licenses are issued only to 'charitable' or 'religious' organizations which have been through an advance screening to establish their eligibility.

. . . organizations winning a license must then contract with one of a small number of games management companies to provide the facility, equipment and key staff (including dealers).

In refusing to directly tax casino revenues, the Alberta government also opted to 'distance' itself from casino gambling and has thus avoided the direct fiscal dependence on casino revenues which Nevada experiences.

Instead of frequenting Alberta casinos, the new urban middle classes in Alberta are either going outside the province to 'slick' casinos of Nevada or spending their disposable incomes in other ways. . . . However, the [economic] boom also swelled (to a lesser extent) the ranks of the immigrant and working class sector of the Alberta population, thereby opening another potential market upon which the casino industry has capitalized.

. . . the refusal of the state to license any more than two casinos on Fridays and Saturdays (and one per day from Monday through Thursday) in the major urban areas, and limitation of the maximum number of gaming tables per casino to 30, results in a situation whereby there seems to be substantially more market demand for casino gaming than there is licensed capacity.

. . . the profits are pumped back into the economy as the middle class charitable organizations build ice hockey arenas, swimming pools, out-patient clinics . . . community halls, etc. . . . it can be argued that, given the redistribution of income from working-class gamblers to predominantly middle-class charities and their beneficiaries, casinos serve as a device for collecting, and disbursing revenues from a voluntary tax. . . .

The authors conclude that "barring public scandal and barring a return to the boom economy of the last half of the 1970s, [they] foresee a significant structural expansion over the intermediate term. . . ."

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***Colin S. Campbell, a graduate student in Sociology, and J. Rick Ponting, Associate Professor of Sociology, are both at the University of Calgary, Calgary, Alberta, Canada.*

The authors wish to thank Roger Gibbins for his detailed comments on an earlier draft of this paper. This is an abridged version of Paper no. 83-02 in the Research Report Series of the University of Calgary's Research Unit for Public Policy studies (Faculty of Social Sciences).

The main purposes of this paper are to trace the development of the Alberta government's policy on licensed casino gambling, to explain that development (primarily in terms of the role of the state), and to assess the likelihood of policy changes affecting the future expansion of the industry in Alberta. It should be noted that the Alberta government's policy towards casino gambling is only part of its overall policy towards licensed charitable and religious gaming. However, we have chosen to focus on casino gambling policy because it has served or will likely serve as a prototype for policies in other areas of licensed gaming.

Alberta is one of the few jurisdictions in North America where casino gambling is both licensed and regularly offered (Baker, 1983). Within Alberta gambling is becoming "big business" in dollar terms, although not in corporate terms. For instance, in 1974 casino gambling yielded an estimated net profit of $0.9 million. Over the next eight years *net casino profits* increased 122%, 140%, 46%, 21%, 5%, 8%, 13% and -3% respectively.[1] In 1982 gambling in casinos, bingos, pull-tickets and raffles took in *gross receipts* of over $221 million. Of this, $79.7 million came from casinos (Alberta Gaming Commission, 1983) and resulted in $10.4 million in net profits to the sponsoring charities. To place casino gambling figures in context we note that the most recent available data show *individuals' net expenditures* in pari-mutuel wagering (1980), Western Express and The Provincial Lotteries (1982), and alcohol sales (1982) to have been $28.3 million, $40.5 million, and $821 million, respectively. Among events licensed by the Alberta Gaming Commission the 1982 figures for individuals' net expenditures for casinos, bingos, raffles, and pull tickets were $17.9 million, $15.1 million, $8.6 million and $20.8 million respectively.

There are three competing theoretical perspectives to explain the development of government policy towards casino gambling. First, Richards' and Pratt's (1979) political economy perspective would suggest a state-instigated and state-propelled expansion of the industry in pursuit of two objectives: (a) diversification of the provincial economy by building up the hospitality and tourism industries, and (b) catering to the recreational (gambling) demands of members of the new urban middle class who support the provincial Progressive Conservative Party. A second possible explanation is found in the notion of regulatory 'capture' (Bernstein, 1955), whereby representatives of the gaming industry would penetrate the regulatory agency (The Alberta Gaming Commission) and succeed in instilling in the regulatory agency a world view favorable to and facilitative of the industry's expansion. A third explanation is that of O'Connor (1973.6) and other political economists who would view the expansion of casino gambling as a manifestation of the capitalist state facilitating capital accumulation and wittingly or unwittingly legitimating the capitalist system to those who otherwise derive few benefits from it.

In the last half of the paper we shall assess these competing hypotheses. First, though, we describe the development of licensed casino gambling in Alberta and the provincial government's policy towards it. That description will provide the qualititative data with which we shall subsequently test the hypotheses. The methodology used in collecting the data is a combination of participant oberservation, structured interviews, unstructured interviews and document analysis. The paper draws on the first-mentioned author's 14 years of experience as a dealer, supervisor, and games manager, and on various contacts he acquired among players, industry personnel, regulators, academics, and others.

History

The Transformation of the Gaming Market

The introduction of licensed casino gambling in Alberta occurred in the context of a major transformation of Alberta society. Richards and Pratt (1979), Gibbins (1980), and others have documented the industrial, economic, demographic, social, and political metamorphosis experienced by Alberta as a result of the oil and gas "boom" of the mid-1970s. That boom, which consolidated changes that had begun as early as the discovery of oil at Leduc in 1947, produced a shift in Alberta's industrial base from agriculture to petroleum and natural gas. Accompanying the economic transformation was an abrupt and sustained increase in population — particularly in the two major urban centers of Calgary and Edmonton — and a shift in the composition of the labor force. Alberta became the only province in Canada in which the majority (51%) of the labor force was in white collar occupations (Masson and Blaikie, 1979:277). Thus, there emerged a new urban middle class composed of professional, managerial, and white collar workers, many of whom directly or indirectly owed their jobs to the fact that Calgary had become the administrative headquarters, and Edmonton the operational headquarters, of the Canadian oil and gas industry. Opportunities abounded and incomes soared (along with the cost of living).

With prosperity, conspicuous consumption (particularly in housing) became the order of the day. A spirit of frontier adventurism developed, particularly in Calgary, and hard work and hard play prevailed. A profit-seeking, accumulation ethic dominated not just the senior executives studied by Newman (1981), but also the middle managers and their neighbors. Even oil rig workers, predominantly single males, found themselves returning on leave to Calgary and Edmonton with an abundance of money in their pockets, for they were paid handsomely for their dangerous and isolated work.

Taken together, these changes signified a dramatic growth in the *potential* market for licensed casino gambling. At the same time, for those who had not yet shared in the new prosperity but who had nevertheless been caught up in its "revolution of rising expectations," gambling offered a means for possibly acquiring the money to participate (however briefly) in the conspiciuous consumption life-style. This "revolution of rising expectations" took place not just at the individual level, where middle managers might seek to emulate their bosses, but also at the collective level as civic associations and charitable organizations ambitiously set out to expand the services or facilities they offered. The members of the new urban middle class tended to constitute the membership (albeit not always the clientele) of these organizations, and just as in their personal lives they looked

to the provincial Conservative Party to facilitate the attainment of their economic needs and career aspirations, they turned to the same source to aid in the fulfillment of their aspirations for these civic projects. (Indeed, many of the members of these civic and charitable organizations were active in the Progressive Conservative Party). One important vehicle which gradually evolved for meeting these emergent needs was the provincially-regulated gambling event, most of the proceeds of which were channelled to the sponsoring civic or charitable organization.

Evolution of Gambling Practice and Policy

Legalized casino gambling first appeared in Alberta in 1967 as one of the first of several policy measures (e.g., lowered drinking age) introduced by the Social Credit government to appeal to young voters and to refurbish its image as a party receptive to changing social needs and values. From 1967 until 1974 almost the only casino gaming formally permitted by the Social Credit government and its successor, the Progressive Conservative government, were events sponsored by agricultural fairs. However, through this seven-year span an occasional one-evening casino was permitted, usually in conjunction with a philanthropic fund-raising activity, such as a $100 per plate dinner and/or a "gentlemen's smoker." The primary function was entertainment, in the form of a "Las Vegas/Monte Carlo Night." Making a modest financial contribution to whatever charity was being assisted was quite secondary.[2]

Casinos at agricultural fairs and exhibitions began in 1967 at the Edmonton Exhibition's Silver Slipper Saloon. Newspaper accounts of the period (Bell, 1968) attribute instrumental roles to the general manager of the Edmonton Exhibition Association and to the city's chief crown prosecutor, the latter of whom was also a member of the Exhibition's grandstand committee. Similar developments occurred in Calgary in 1969 when the Calgary Exhibition and Stampede entered casino gambling. There a local entrepreneur acted as agent for the American carnival company, Royal American Shows, which supplied the games and other equipment for the casino. The same entrepreneur participated in the expansion of casino gambling to other agricultural fairs in Alberta, Manitoba, and Saskatchewan, and was instrumental in the expansion of the industry beyond the confines of these fairs and exhibitions.

Holding casinos at fairs and exhibitions was made possible by Section 189(3) and 190(d) of the Criminal Code of Canada. Initially, there was no government regulation, and revenues were split between the exhibition boards and the gaming operators on a contractual basis. In the fall of 1975, however, there was a casino event which was to drastically change the character of casino gambling in Alberta. The aforementioned entrepreneur convinced his contacts at the B'nai B'rith of the revenue-generating potential of casinos for charitable organizations. One of those contacts, a prominent Calgary businessman who was also a B'nai B'rith leader, persuaded the Alberta Attorney General's department to grant B'nai B'rith a license for a four-day casino to be held on the Calgary Stampede grounds in October to generate revenue for a children's summer camp. As far as we have been able to ascertain, this was the first major effort to exploit Section 190(1)(c) of the Criminal Code, which permits provincial governments to license charitable or religious organizations to conduct and manage a *lottery* scheme in their province if the proceeds from the lottery are used for charitable or religious purposes.[3] The gaming tables and necessary apparatus were provided by the aforementioned entrepreneur.

The publicity surrounding the event captured the attention of other charities which began to lobby the provincial Attorney General's department for permission to hold casinos. A flood of applications set the stage for the transformation of the primary function of casinos from entertainment to fund-raising.

With no proper administrative mechanism to process or police the numerous applications, the Attorney General was compelled to build a gaming control system and a regulatory bureaucracy. In the spring of 1976 he named as head of the newly-created Gaming Control section a former Royal Canadian Mounted Police staff sergeant with widely respected expertise in casino gaming control. His appointment came within a year of the massive police raid on Royal American Shows at the Edmonton Exhibition and thus amid fears of penetration by criminal interests (Laycraft, 1978:B2-B3, B12-B20). Importantly, he had the *trust* of the Attorney General who felt confident that with him heading the Gaming Control Section, Alberta could successfully regulate casino gambling. However, although that trust in his gaming control expertise was well-founded and proved to be crucial in the development of casino gambling in Alberta, we shall observe below that he did not have the political sophistication to steer the Gaming Control Section clear of political problems with the government's main constituency (the middle class).

In July of 1977 the Gaming Control Section attempted to implement restrictive rules governing casinos (Johnston, 1980). The protests of various charities and community groups led the Gaming Control Section to back off temporarily. When a further attempt to tighten restrictions was made in November 1978, a few months before the provincial election, the licensees vigorously lobbied their MLSs (virtually all of whom were Conservatives). The government responded by striking a caucus task force to review provincial gaming and by withdrawing the proposed revision. In early July 1979, a Citizens' Advisory Committee on Gaming was also appointed to report to the caucus task force. Significantly, the chairperson and vice-chairperson of the Advisory Committee were long-standing organizational activists in community affairs in Edmonton and Calgary, respectively (Alberta Report, 1979; Pratt, 1980).[4] The committee obtained public involvement in the form of written submissions — rather than public hearings — from concerned organizations and individuals, and numerous interviews were conducted with "key personnel" in gaming and associated areas.

One important outcome of the advisory committee's final report (May 1980) was that a separate regulatory agency, the Alberta Gaming Commission, was established in January 1981. It comprises a full-time chairman, six part-time com-

missioners, and a small support staff. The commission is responsible for issuing gaming licenses for casinos, bingos, raffles, and pull-ticket games. It also handles such other functions as providing policy advice to the government and providing public information on policy guidelines (Order-in-Council 124/81, *Alberta Gazette).* According to the chairman of the Commission, a central task has been to prescribe the objectives of licensed gaming. He has stated that the overriding objective is *"meeting community needs"* (versus generating government revenues) and that gaming is not to be expanded beyond such needs. This implies a ceiling on the growth of the gaming industry and puts the government and the industry in conflict.

Another outcome of the advisory committee's report was that the government did not impose onerous restrictions and continued its liberal interpretations of the phrases "lottery scheme," "charitable or religious organization," and "charitable or religious object or purpose" in Section 190(1)(c) of the Criminal Code of Canada. Under that interpretation, a vast array of cultural, community, medical, sport, and educational associations have qualified as "charitable or religious" organizations and about 450 casino licenses are now issued annually. Examples of organizations granted licenses are the following: Knights of Columbus, Canadian Amateur Swimming Association, Southern Alberta Opera Association, Cystic Fibrosis Society, Calgary Philharmonic Society, Alberta Theatre Projects, and various community associations. Community associations are particularly heavily represented as they account for almost 25 percent of all licensed organizations.

To conclude this discussion of the evolution of gaming practice and policy it is useful to mention briefly some of the highlights of the casino regulations. One of the key regulations is that licenses are issued only to "charitable" or "religious" organizations which have been through an advance screening to establish their eligibility. These licenses, for which a modest administrative fee is charged, are each for two days. The licenses, and the dates attached to them, are dispensed every other month in public draws. Organizations winning a license must then contract with one of a small number of games management companies to provide the facility, equipment, and key staff (including dealers). As its fee the management company must take a fixed sum agreed upon in advance, rather than a portion of house earnings. The charitable organization holding the license must provide volunteers to fill certain administrative positions (e.g., chip running and money counting). Liquor is forbidden on the premises. The fact that regulations require that a casino be held in the municipality in which the applying organization is based means that charities in small municipalities do not have access to the high revenue potential of the Calgary and Edmonton markets.

Explanation and Predictions for Future Expansion

In seeking to explain the development of gaming policy and practice two factors need to be considered: the policy choices foregone and the nature of the clientele which the casinos do attract.

Casino Gaming Policy in Comparative Perspective

Licensed casino gambling has taken on quite different forms in other jurisdictions and a brief examination of those other approaches suggests some policy options which the Alberta government chose to shun.[3] Between them, Skolnick (1978, 1979) and Eadington (1982) describe casino licensing arrangements in four jurisdictions, including Alberta. In Nevada, for instance, where the entire state is quite dependent, economically, upon the gaming and tourism industry, Eadington reports a "laissez-faire" approach. The policy objectives of the regulatory agencies appear to be mainly to sustain and promote the economic viability of Nevada gaming and to preserve the image of legal respectability (Eadington, 1982:5). In this latter respect the policy is largely symbolic.

New Jersey imposes a casino tax of 8 percent of gross gaming revenues. While Nevada also taxes the industry's revenue, the New Jersey tax differs in that its revenues are earmarked to support programs for senior citizens and handicapped persons by means of relief on their property taxes and utility bills. However, the *New Jersey Casino Control Act* (1977) stresses *urban development* for Atlantic City as the objective of gaming policy. Thus, casino licenses there are issued only to major hotel and convention facilities in an attempt to preserve the existing nature of the larger hospitality industry and to prevent casinos from developing into an industry unto themselves as they have in Nevada. Consistent with this objective, locating gaming devices in public areas outside of casinos (e.g., slot machines in restaurants) is prohibited. There is compulsory licensing of casino employees, casino hotel employees, and even firms in the casino service industry (such as suppliers of food, linens, and beverages) and advertising is strictly regulated such as in the requirement that visual advertising contain the words "Bet with your head, not over it."

In Britain participants in a casino's games must be members of that particular casino club, or guests of members. To prevent "impulse" gambling, application for membership in a club must be made at least 48 hours before the person intends to gamble. Most advertising is prohibited, in order to prevent the artificial stimulation of demand. Live entertainment on the premises is prohibited and liquor cannot be served in the casino area. Other British restrictions include the following: through the *de jure* designation of "permitted areas" casino gambling is *de facto* confined to large cities and certain tourist and holiday centers; hours of operation are restricted to between 1400 hours and 0300 or 0400 hours daily; casinos (as in Alberta) are not allowed to grant credit to players; and the regulatory agency can revoke a company's license or even issue a disqualification of the premises, thereby preventing casino gambling from taking place at that location for a period of five years. The overall policy thrust is that casino facilities should be sufficient, but no more than sufficient, to satisfy an *unstimulated demand* for gaming which might otherwise seek an illegal outlet.

Thus, Alberta government policy on casino gaming eschews the laissez-faire approach of Nevada but is somewhat more liberal than the British approach. In comparison with

New Jersey, the Alberta policy exercises less direct control and is clearly less oriented towards the *promotion* of casino gambling as an instrument of economic development. In refusing to directly tax casino revenues, the Alberta government also opted to "distance" itself from casino gambling and has thus avoided the direct fiscal dependence on casino revenues which Nevada experiences. However, with respect to the use of gaming proceeds, now that many charitable organizations in Alberta have become dependent upon casino revenues, the contrast between Alberta and New Jersey diminishes, for senior citizens and handicapped persons in New Jersey are perhaps as reliant upon the subsidies which they receive from direct taxes on New Jersey casinos' revenues.

Comparison with other policy choices can also be instructive. For instance, it is noteworthy that although Alberta has participated in crown corporations in conjunction with other lotteries (e.g., "The Provincial" and "The Western Express"), it has to date shunned the crown corporation as a vehicle for casino gambling. This is probably in part a reflection of Alberta governments' long-standing distaste for crown corporations (Richards and Pratt, 1979:67-68, 216), but more importantly, it also reflects the Lougheed government's desire not to become fiscally dependent to a significant degree on gambling revenues, the way it has become reliant upon alcohol revenues. (Profits from the sale of alcohol in 1982 were $282.5 million.)

The "joint venture" approach used in such cases as the creation through special provincial statute of Alberta Gas Trunk Line Limited and the Alberta Energy Company would have allowed an oversight role for the government (through placement of persons on the board of directors of a non-crown corporation). However, given the reputation of the casino industry as prone to organized crime and corruption, such an oversight role was probably seen as being not close enough to daily operations to permit effective monitoring, yet close enough in the public's mind to implicate the government if any scandal arose. Accordingly, it has little appeal as a policy vehicle. Finally, that same fear of organized crime, grounded in part in experience with Royal American Shows, probably led the government to rule out another governing instrument — namely, self-regulation — which, to varying degrees, it has permitted for the housing construction industry and various professions.

Casino Clientele

For various reasons it is not possible to obtain an objective assessment of the social class composition of casino patrons in Alberta. Thus, our discussion of the casino clientele is necessarily subjective and impressionistic and is accordingly open to *post hoc* challenge by those who find our conclusions distasteful for moral or political reasons. Nevertheless, we contend that the social class of Alberta's casino clientele can be gauged, albeit crudely, through the use of multiple indicators of social class. These indicators, which often appear in combination in one individual, include: signs of lack of adequate medical/dental care and dietary balance; degree of personal cleanliness; absence of middle class fashion apparel; adequacy and nature of winter outerwear; hairstyles; and vocabulary. Judging from these indicators, from one of the authors' acquaintances with patrons, and from the reputation of clients among casino staff members,[6] we feel safe in describing the Calgary casino clientele as being predominantly from the working class rather than the middle class or upper middle class. The clientele is definitely not the "nouvelle bourgeoisie" or even the aspiring middle manager of corporate Alberta.

Another salient characteristic of the casino clientele is that it contains an over-representation of the so-called "other ethnic groups" (non-English, non-French in origin). Middle-aged and older persons of Oriental origin are heavily represented at a Calgary casino located near the city's "Chinatown" district. At both Calgary casinos, blacks are over-represented as are young Asian males, many of whom are employed as waiters and busboys in Calgary restaurants. The clientele consists mostly of "regulars" and hardly at all of young adult couples seeking to round out an evening on the town with some enjoyment at the casino.

Although our direct observation of casino clients in other Alberta locations is limited, such exposure as we do have, combined with information from informants in the industry, indicates that these other clients are strikingly similar in social class and ethnic origin to those found in Calgary.[7]

Examination of Hypotheses

We are now in a position to assess the hypothesis which suggests that the growth of casino gambling in Alberta is an attempt by the state to cater to the recreational demands (gambling) of the new urban middle classes with which state actors most closely identify (Richards and Pratt, 1979:164-6, 242-3). We see that the nature of casino clientele clearly contradicts this hypothesis, as does the failure of the state to permit the sale and consumption of alcohol in casino premises. Instead of frequenting Alberta casinos, the new urban middle classes in Alberta are either going outside the province to the "slick" casinos of Nevada, or spending their disposable incomes in other ways. The casinos are not being used as a vehicle for the middle class to emulate the upper middle class. Thus, despite the fact that the economic boom brought a major transformation to the potential casino market by swelling the ranks of the middle class and upper middle class, casinos have not been able to tap that market. However, the boom also swelled (to a lesser extent) the ranks of the immigrant and working class sector of the Alberta population, thereby opening another potential market upon which the casino industry[8] has capitalized.

The fact that the clientele of the casinos is disproportionately working class also militates against the attractiveness of the casinos to middle class persons whether they reside in or out of the province. We had hypothesized that the Alberta state would have attempted to use casino gambling to diversify the Alberta economy, since the Nevada experience has clearly proven the agility of gaming to generate spin-off jobs (and tax revenues) in the tourism and hospitality industry. However, Albertan officials appear to have had no such objectives, for the regulations imposed by the state work at cross purposes with such objectives. More specifically, the refusal

of the state to license any more than two casinos on Fridays and Saturdays (and one per day from Monday through Thursday) in the major urban areas, and limitation of the maximum number of gaming tables per casino to 30, results in a situation whereby there seems to be substantially more market demand for casino gaming than there is licensed capacity.[9] There is thus no incentive for any given charity, allowed to sponsor only one two-day casino per year, to expend money on entertainment or promotional schemes in order to attract tourists to the casinos. The existing table capacity is already occupied by the local clientele and the casinos thus do not become a vehicle for attracting tourists to Alberta.

The casino games management companies have shown a keen interest in diversifying the industry to retain the present clientele and to capture other sectors of the market. A principal figure in one such company recently applied (albeit in another capacity) for permission to introduce some new games of chance.[10] He and other games managers express concern that the players will become bored with the three games (blackjack, roulette, and wheels of fortune) now permitted and will drift away. Given the spartan appearance of existing casino facilities and the unavailability of liquor in the casinos, they worry that a bored working class clientele would likely not be replaced by a middle- and upper middle-class clientele. Bored with overseeing the existing games and concerned about the future of the industry, the casino managers thus express exasperation at the Gaming Commission's refusal to date to allow diversification. Such diversification is probably also a prerequisite for turning the casinos into a tourist attraction.

The other component of our initial hypothesis was the notion that the provincial state would be the instigator and main force behind the expansion of casino gaming. We have just discussed how the state has actually resisted such expansion-through-diversification. The hypothesis is further undermined by the previously cited historical data which outlined the instrumental role, not of the state, but rather of a particular private-sector entrepreneur, in the spread of the industry. The restrictive efforts of the state (i.e., the proposed tightening of regulations in 1977 and 1978), and the concerted pressures brought to bear by charitable organizations also militate against the hypothesis.

Our second hypothesis dealt with the notion of regulatory capture by the industry. In assessing this hypothesis we must first refine our notion of "the industry." In some respects casino gaming in Alberta is structured along similar lines to the airline passenger industry. Licenses are granted to airlines to earn profits by carrying passengers and to charities to earn profits by sponsoring a casino. Travel agencies serve as middlemen agents for the airline by providing part of the service and absorbing part of the overhead (re: reservations and ticket delivery.) Similarly, games management companies provide part of the service (the major part) to the consumer and absorb most of the overhead, both on behalf of the charity. Thus, just as air passenger transport involves both the airline industry and the travel agency industry, casino gaming involves both the charities industry and the games management industry. While we have demonstrated the failure of the games management industry to capture the regulatory agency, such a conclusion does not necessarily apply to the charities industry.

The case will be made here for the argument that there has occurred a variant of regulatory capture by the charities industry. That capture does not take the form of placing industry officials on the regulatory commission itself or in staff positions in the commission. Nor has anything like Bernstein's "natural cycle of decay" occurred.[11] Rather, "capture" may be said to have occurred to a limited extent at an earlier point when the charities succeeded in resisting the imposition of stricter regulations and in acquiring the chairmanship and vice-chairmanship of the 1979 advisory task force. Equally important, though, has been the success of the charities industry in boxing the regulatory agency into a political corner which we shall discuss below. However, lest we convey the erroneous impression that the regulatory agency has become subservient to the charities industry, it should be stressed that there are major regulatory constraints[12] now imposed on charities and that those constraints are unlikely to be loosened in the near future.

Limitations on the freedom of action of the gaming commission arise from two sources: the demonstrated political clout of the middle-class charities, and the political attractions which the government finds in casino gaming as a form of indirect taxation. The former has already been discussed and the latter will be addressed presently.

Dombrink (1981) has argued that in the United States licensed gambling has been highly attractive to state elites for several reasons. One is that gambling has provided significant tax revenues which have helped to ease the fiscal crisis of the state. Like O'Connor (1976:6) and others, Dombrink also raises the notion of the state acting to facilitate the accumulation of wealth by private industry and to maintain the conditions necessary for social harmony by legitimating the "free enterprise" system to those who are not its prime beneficiaries. To the extent that gambling contributes to these two roles of the state it will likely offer at least some attraction to the state elite who may well resist overly zealous attempts by the regulatory agency to restrict gaming.

In Alberta the oil- and gas-based boom enabled the provincial government to eschew for itself the full tax revenue-generating potential of gambling. Gaming policy has also shied away from efforts to stimulate certain sectors of private industry such as new hotel-casino complexes and tourist-related businesses. However, gambling has retained its attractiveness to state elites, perhaps because it facilitates capital accumulation, serves to legitimate the private enterprise system and the state itself, and is politically convenient.

Gambling helps the state to fulfill its role of facilitating the accumulation of wealth in that the profits are pumped back into the economy as the middle-class charitable organizations build ice hockey arenas, swimming pools, outpatient clinics (in a children's hospital), community halls, etc. Here, though, we have accumulation occurring at the level of the collectivity (e.g., the neighborhood) rather than at the level of private industry oriented toward financial profit. Indeed, the gains for the latter, whether in the games

management industry, the tourism industry, or the construction industry, are minor. However, as neighborhood property values rise with the completion of such facilities which gambling revenues have made possible, a modest financial gain may accrue to residents of those neighborhoods.

Gambling also helps the state to achieve the legitimation function. It provides an opportunity for working class persons to share in the province's prosperity. Without gambling they might not even be able to hold out any *hope* of sharing in that prosperity. For the new middle class, gambling proceeds provide a means of satisfying rising expectations and demands for better community facilities. The success of middle-class charitable organizations at acquiring such facilities also reinforces their members in the belief of middle-class ideology that "anything is possible" if individuals are willing to put forth the requisite effort. Furthermore, ideological acceptance of the provincial state is fostered as citizens come to see it as responsive to changing social needs and demands and as not blocking groups' opportunities.

Turning next to the revenue-generating function of gambling, we are aided in our analysis by an important monograph written by Maslove (1981) on the topic of "tax expenditures." Maslove, and opposition politicians in Parliament, have made the point that various features of our income tax laws — such as deductions for spouses, for dependents, for registered home ownership savings plan contributions, for depletion allowances, etc. — should really be considered as government expenditures. This is because they constitute taxation income foregone by the government. By means of a similar logic it can be argued that, given the redistribution of income from working-class gamblers to predominantly middle-class charities and their beneficiaries, casinos serve as a device for collecting, and disbursing revenues from a voluntary tax — for the transaction is clearly under government control.[13] Furthermore, on the disbursement side gambling offers most of the same political advantages as tax expenditures.

Maslove has pointed out that by relying more heavily on tax expenditures, governments can hold recorded public spending in check. Similarly, since disbursements to charities from casinos are not processed through government revenue accounts, the Alberta government can direct money to charities without having that money recorded as part of government spending. This is important in Alberta, where the popular ideology frowns on "big government." Similarly, as Maslove would note, this indirect method of disbursement avoids the annual legislative approval procedures necessary for direct spending programs and is not subject to the scrutiny of the Auditor General at year's end.

As in Maslove's tax expenditures, the Alberta government's approach to gaming conveys the impression of only minimal government involvement, of less directive government involvement, and of more reliance on decentralized private initiative (of the charities industry, in our case.) Like tax expenditures, the gambling system in Alberta enables the one level of the state (the province) to intervene in a limited way at a lower level (the municipal level.) Indeed, by directing gambling profits to charitable organizations at the neighborhood and municipal level, the province is able to lessen somewhat the demands by municipal governments for revenue sharing.[14]

In summary, then, the provincial state's approach to casino gambling in Alberta has enabled it to fulfill the function of promoting social harmony, as O'Connor would have hypothesized. Much less directly and in a much more limited sense the same policies have contributed to the state's role of facilitating the accumulation of wealth and reducing state expenditures, again as O'Connor would hypothesize. Since 1980 these have all been accomplished in a manner which enhances the popularity of the governing party, particularly among the middle class constituents upon whom it is so dependent for electoral support.

Predictions Concerning Future Structural Expansion

In assessing the likelihood and nature of any future structural[15] expansion of casino gaming it is necessary to first consider both the socio-political characteristics of the games management industry and the general economic prognosis for the province of Alberta.

The casino management industry clearly has a stake in the structural expansion of casino gaming which would yield greater revenues to the charities and thereby enable management fees to be raised. However, because of the nature of the casino management industry, success in efforts to obtain regulatory approval for structural expansion is by no means assured. The industry encompasses only a small number of firms, each of which is small. (The dealers, pit bosses, etc. are not actually employed by these firms.) These businessmen generally have a low level of formal education and neither they nor their firms tend to be integrated with the larger hospitality industry from which they might derive some political influence. Indeed, in contrast to the charities which hire them, the casino management firms tend to be politically "unconnected" and have demonstrated a lack of political sophistication (e.g., the failure of such firms to approach even a local member of the Legislative Assembly to press their case.) Thus, in light of these factors and the fact that gross casino profit in absolute dollar terms is increasing even without further structural expansion of the casino industry, it is likely that the regulatory commission will feel no need to respond to expansionist pressures from this quarter.

However, changes in the general situation of the Alberta economy could generate substantial pressures for structural expansion of casino gambling. Alberta government revenues from petroleum and natural gas have declined seriously and even more drastic declines are possible. Such declines could precipitate a re-examination of the policy of non-taxation of casino revenues. If that non-taxation policy were to be abandoned, to minimize the impact upon its middle class political constituency (such as the charities industry) the Conservative government might permit the revenue "pie" to grow through the structural expansion of casino gaming (e.g., by licensing more casinos per year, more tables per casino, and/or more types of games.)

The decline in the Alberta economy ended the population influx, and while one might argue that this will slacken

charities' demand for casinos, the reverse seems more likely to us. That is, the economic downturn in Alberta has already been accompanied by fiscal restraint at the provincial and municipal levels and by private sector corporations and individuals who make donations to charities in better economic times. Without a strong recovery of the Alberta economy, it is likely that charities will become increasingly dependent upon casino and other gaming revenues to attain their objectives. Such an increased dependency will likely be manifested in calls for structural expansion of casino and other gaming.

Another factor which is likely to increase demands for casino gaming is the staging of the 1988 Winter Olympics in Calgary. Assuming that the games go ahead as planned, there will be an influx of tourists from Canada and abroad. Demands from the charities and the XV Olympic Winter Games Organizing Committee to expand casino gambling can probably be readily accommodated through temporary relaxation of provincial regulations. However, similar demands from the games management industry will likely intensify due to the investment which firms in that industry will have to make in order to attract that upper middle-class Olympics clientele. To the extent that the industry incurs sunk costs by creating new facilities which are of a relatively permanent nature and which would be attractive to middle-class Albertans after the Olympics, we would likely have a convergence of interests (on the part of the charities, the games management industry, the hotel industry, and the state) which would favor permanent structural expansion of casino gaming.

In our view, a major impediment to the unfolding of this scenario would arise only if the industry (in Alberta or elsewhere) were to be tainted anew by a major public scandal involving organized crime. Under such circumstances the lobbying of the Calgary and Edmonton police chiefs, the wariness of the elected politicians, and the power in Cabinet of the minister responsible for gaming control (the Attorney General) would probably combine to keep structural expansion in check under a very tight regulatory rein.

In summary, then, we foresee little prospect of the games management industry being successful in its efforts to obtain structural expansion of casino gaming in the short-term future. However, barring public scandal and barring a return to the boom economy of the last half of the 1970s, we foresee a significant structural expansion over the intermediate term as Calgary gears up for the 1988 Winter Olympics and casino gaming comes to be more closely integrated with the tourism industry. The long-standing rivalry between Calgary and Edmonton will probably result in irresistible political pressure for that expansion to occur in Edmonton as well, even though Olympics tourists will be much less prevalent there.

Conclusion

In conclusion, we wish to briefly raise two further matters. These are, first, the role of trust, and secondly, the issue of casino gaming in other Canadian jurisdictions. Trust, or the lack of it, is a sociological variable of major importance not only in public policy contexts, but also in other contexts. It runs like a subterranean stream through numerous case studies of policy formulation, yet is usually accorded only passing mention rather than systematic analysis as an independent variable. One example of the role of trust in Alberta is provided by Bella (1982:21-2). She documents the important role which trust between the Minister and the Deputy Minister played in the development of the preventive social services policy framework by the Alberta government during the mid-1960s. Conversely, Schultz (1980:98-9, 111, 123), Ponting and Gibbins (1980:29, 175-180), and others have shown the ramifications which a lack of mutual trust can have on the policy process and policy product. In the case of casino gambling in Alberta what we saw is a transformation from an atmosphere of mutual trust on the part of the government, the casino operators, and the police, to an atmosphere in the mid-1970s and later of distrust in the form of a fear of infiltration of organized crime and cheaters. In addition, the trust held in the former RCMP officer by the Alberta Attorney General led to broad responsibilities being placed in the hands of the former. In more general terms, trust stands in need of development as a variable which can contribute significantly to our understanding of the policy development phenomenon, especially insofar as such matters as the conferring of discretionary powers and the monitoring of policy implementation/compliance are concerned.

Finally, we turn to the issue of casino gambling in other Canadian jurisdictions. In this paper we have studied the evolution of casino gaming in Alberta from what Theodore Lowi's classic typology would label as a "distributive"[16] mode, to a "regulatory"[17] mode with a pronounced "redistributive"[18] thrust. This evolution began with incremental changes to the *de facto* policy, and these changes were instigated by the private sector. However, with a decline in trust among the relevant actors, the formation of the Gaming Control Branch of the Attorney General's Department, the striking of the 1979 citizens' advisory committee, and implementation of many of its recommendations, the policy style switched to more of a "rational planning" approach. Despite some noteworthy similarities in the background social, legal, and economic conditions in certain other jurisdictions — like Saskatchewan and British Columbia — the policy response in those jurisdictions has been different from Alberta's, thus raising interesting questions of comparative analysis. It is our hope that this paper will stimulate an interest among academics to pursue those analytical questions of comparative public policy, as well as alerting policy-makers in other jurisdictions to some of the pitfalls and unintended redistributive consequences of incrementalism in this policy realm.

Footnotes:

[1]While gross casino profits increased in 1982, the decline in net casino profit is attributable to both an increase in operating expenses and minor random fluctuations in house winnings. Readers interested in a more thorough technical exposition of this are invited to contact the authors.

[2]On those occasions when licenses were issued for such casinos arrangements were sometimes highly informal. They consisted of providing to local police verbal notification of intent to hold a casino.

[3]Provinces have succeeded in having casino card games like blackjack qualify as a lottery under this section of the Criminal Code.

[4]In Alberta it is common for urban residents to be organized into "community associations" which cater to the social and recreational needs of neighborhoods and protect neighborhood interests and property values in the face of such perceived threats as land use re-zoning applications by developers. Calgary, a city of over 600,000 reisdents, has 110 such community associations.

[5]In making these comparisons we should bear in mind that in some cases we are comparing government regulation of gaming that is conducted and recognized as a commercial activity, to government regulation of religious and charitable organizations' fund raising. In some respects this might be misleading, in that the policy issues involved are not identical.

[6]Among staff members the impression is pervasive that the casinos cater to a lower class clientele.

[7]Indeed, many "regulars" who disappear from the casino scene in Calgary (often because of a surfeit of bad debts outstanding) reappear in Edmonton.

[8]So far, we are using the term "casino industry" to encompass both the games management sector and the charities sector.

[9]Indeed, due to the lack of vacant spaces at the gaming tables, gamblers will commonly queue behind the players while waiting to take their place. Furthermore, the influx of applicants for licenses has been so great as to create, at the time of writing, a delay of approximately 16 months from time of application for a casino license to date of holding the casino.

[10]The application was not successful. The reasons for its rejection by the Gaming Commission were that it would create a precedent for other casinos, would expand the amount of gaming, and would change the nature of gaming from games of chance (players versus "the house") to games of skill (players versus other players).

[11]Bernstein's natural history model involves consumer pressure for the creation of a regulatory agency, a subsequent lessening of consumer vigilance, and the gradual changing of the agency to the point where it thinks and acts as if it were the protector of the industry.

[12]We refer specifically to the two-day limit on casinos, the limit on the number of tables available, and the limit of one casino operating at a time in any municipality (except Calgary and Edmonton where two are permitted on weekends.)

[13]We have seen how government regulations have largely determined the nature of the gambling clientele or "tax payer." Government regulations setting betting limits at tables can be viewed as setting the tax rate, although the expressed intent is one of providing protection to the players and the organizations involved. Finally, government regulations establishing criteria of eligibility for charities are the equivalent of criteria establishing the target population for programs on which other government tax revenues are spent.

[14]In January 1984, just prior to publication of this article and immediately after the Loto 6/49 "craze," municipal demands for revenue sharing took on a new twist. Responding to overtures from private entrepreneurs, the mayors of Calgary and Edmonton combined to call upon the federal and provincial governments to amend the Criminal Code and provincial gaming regulations so as to allow the municipal level state to sponsor "world-class" casinos (Morton, 1984). In what may well have been an attempt to blunt opposition from the charities industry and other interested parties (such as religious groups,) the mayor of Calgary proposed to direct the profits to the budget of the city's Parks and Recreation Department. However, it appears to us that unless the Calgary-Edmonton municipal government proposal is changed to include a co-sponsoring arrangement with charities, it will be fundamentally incompatible with a provincial gaming practice which to this point has placed primary emphasis upon the use of casino gaming to raise funds for charities and exhibitions.

[15]In this paper we differentiate between "expansion" and "structural expansion" of the casino industry. The former refers to a growth in revenues and profits, whereas the latter refers to changes in casino gaming regulations, such as the licensing of more casino events, the licensing of more tables, the licensing of new casino games, etc.

[16]In Lowi's (1964) scheme "distributive" policies are characterized by "the ease with which they can be disaggregated and dispensed unit by small unit, each unit more or less in isolation from other units and from any general rule" (Lowi, 1964:690), Lowi goes on to say, "These are policies that are virtually not policies at all, but are highly individualized decisions that only by accumulation can be called a policy. They are policies in which the indulged and the deprived, the loser and the recipient, need never come into direct confrontation."

[17]Lowi (1964:690-1) says that regulatory policies are distinguishable from distributive ones in that "in the short run the regulatory decision involves a direct choice as to who will be indulged and who deprived. Not all applicants for a single [license] can be propitiated . . . individual decisions must be made by application of a general rule and therefore become interrelated within the broader standards of law."

[18]Lowi never explicitly defines his use of the term "redistributive" and seems instead to use it in its everyday fashion.

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Managing Accounts Receivable

*By Frederick C. Scherr**

In the late 1950s and early 1960s, writers of finance textbooks introduced new capital budgeting techniques designed to supplant the traditional accounting return and payback methodologies. There was much interest in the extent to which firms were adopting discounted cash flow (DCF) techniques, the discount rates used, and in risk-adjustment methods. Consequently a series of surveys was conducted to determine capital budgeting practices of large industrial firms and multinational companies.[1] These surveys have shown the overwhelming adoption of DCF techniques as the primary method of project analysis.

More recently, new techniques in the management of accounts receivable have been introduced in finance textbooks. The major advances include (1) the use of marginal sales and cost effects to evaluate changes in terms of sale, and (2) the use of failure-forecasting functions to help make credit-granting decisions on trade credit applicants. However, there has been little survey research in the current practice of accounts receivable management and the adoption of these and other new methodologies.[2]

In this article, the results of such a survey are discussed. By means of these survey findings financial executives should be able to gauge the sophistication of their current decision methods relative to those used by other firms, and to consider future policy direction in this area.

Survey Technique and Preliminary Data

A questionnaire study was undertaken in late 1981. Questionnaires were sent to the headquarters of the *Fortune's 500 Industrials* addressed to "General Manager - Industrial Credit."[3] In an attempt to aid reliability, the material in the questionnaire was phrased in the jargon usually used by practicing credit managers, based on the author's several years of experience in credit management. To increase the response rate, the number of issues investigated was limited and the questionnaire was brief. Of the 500 questionnaires mailed, 277 were returned, of which 245 were usable. This 49% usable response rate is higher than rates achieved by most studies of capital budgeting techniques. The vast majority of the respondents indicated their job title as Director of Credit, General Manager, Assistant Treasurer, or some similar finance-related position. As would be expected from a survey of large U.S. nonfinancial firms, most listed their larger business area as the manufacture of durable goods, and most had assets of over $1 billion.[4] In the remainder of this article some of the survey results are discussed.

Terms of Sale Decisions

In order to assess the adoption of the techniques of evaluating terms of sale changes by marginal sales and cost effects, respondents were asked to indicate the method used to decide on terms of sale. Data on responses are presented in Table 1. The 1.6 percent of respondents using numerical evaluation methodologies is somewhat understated, since some of the multiple responses indicated that this type of evaluation was one of several considerations. However, it is very clear that "follow the leader" strategies were dominant; almost 60% of the respondents indicated that they simply used traditional terms in their markets.

TABLE 1

Reported Terms-of-Sale Decision Method

Classification	Responses Number	Percent
Use terms of sale traditional in markets	145	59.2
Decide based on market conditions	41	16.7
Use numerical evaluation methodology*	4	1.6
Other or multiple responses	55	22.5
Total responses	245	100.0

*Includes marginal analysis and other types of numerical evaluation.

Why haven't firms adopted the marginal analysis techniques? The recent study of Hill, Wood, and Sorenson (see footnote 2) can provide some insights. In analyzing the effects of a relaxation in terms of sale, the marginal analysis technique usually involves a comparison of sales revenue increases with increases in other credit-related costs (though it is usually acknowledged that estimating the dollar value of the sales increase is very difficult). In their survey, Hill, Wood, and Sorenson asked credit executives to estimate the consequences of a change in terms of sale from 1 percent 10 days, net 60 days, to 2 percent 10 days, net 60 days. Over 79 percent of the respondents from large firms indicated that they felt that sales would "stay about the same." This is presumably because it is assumed that competitors would also change their terms to meet this relaxation; this is discussed elsewhere in Hill, Wood, and Sorenson's article. Managers may not realize that where there is a lag between

**Frederick C. Scherr is Associate Professor of Finance, Department of Accounting and Finance, College of Business and Economics, West Virginia University, Morgantown.*

change and response, the change may still be of advantage.[5] However, without the sales effect, it would appear that decision makers perceive that few term relaxations would result in increased marginal profit. Thus firms currently rely almost exclusively on traditional terms of sale.

Credit-Granting Decisions

Deciding who gets credit and/or how much credit is to be granted is a critical and frequent decision in accounts receivable management. The traditional way to make this decision has been to utilize the judgment of the credit manager. Another approach has been to use some sort of "judgmental model" approach. In this methodology, a decision model is used based on the opinions of an experienced credit analyst. Other approaches involve using a decision model or a method based on a statistical analysis of past defaults.[6] In either of the latter two approaches, the decision model or statistical analysis method used could be developed in-house or outside the firm. One of the questions in the survey asked respondents to indicate their credit decision methodology among these alternatives. Data are presented in Table 2.

TABLE 2

Reported Credit-Granting Decision Method

Classification	Responses Number	Percent
Judgment of credit managers	181	73.9
Judgmental model developed in-house	29	11.8
Failure-forecasting model developed in-house	7	2.9
Judgmental model developed outside firm	0	0.0
Failure-forecasting model developed outside firm	0	0.0
Other or multiple responses	28	11.4
Total responses	245	100.0

While some of the multiple responses indicated partial use of various models, it is clear that purely judgmental methods were the predominant decision-making techniques. It would certainly appear that failure-forecasting methods, which have received significant attention in the academic literature over the last fifteen years, have not made much impact on the practice of industrial credit management. Further, as indicated by the data in Table 3, the credit-granting decision was seen, by far, as the most difficult credit-related decision to make.

As before, the question of why new techniqes have not been adopted may be asked. Since the credit-granting decision is recognized as the major source of difficulty, a lack of problem recognition does not appear to be the obstacle. One explanation is that credit managers are not aware of other practical alternatives to the purely judgmental methods. That is, unlike capital budgeting methodologies, description of these accounts receivable management methodologies may not have attracted the attention of policy makers.

Other Accounts Receivable Management Practices

One question continually facing credit managers is the

TABLE 3

Decision Reported as Most Difficult to Make

Classification	Responses Number	Percent
Terms of sale	24	9.8
Amount of information to collect on credit applicants	12	4.9
Who gets credit and/or how much credit should be granted	157	64.1
What interest rate to use in accounts receivable decisions	4	1.6
Other or multiple responses	48	19.6
Total responses	245	100.0

amount of information that should be collected on credit applicants. In a "cost of information" sense, the answer is clear: sequentially collect information until the advantage gained by the next additional information bit is not worth its cost. Since bad debt expense and accounts receivable carrying cost are likely to increase with the amount sold to a credit applicant, this would suggest that more information should be collected in connection with larger sales volumes. The data in Table 4 suggest that many firms did indeed gather more information when actual or potential sales were larger.

TABLE 4

Reported Decision Methodology on Amount of Information Gathered for Credit-Granting Decisions

Classification	Responses Number	Percent
Specific amount of information required	57	23.2
Always try to get as much information as possible	33	13.5
More information required for larger orders	108	44.1
Other or multiple responses	47	19.2
Total responses	245	100.0

Another accounts receivable policy question concerns whether any limit (known as "credit limit" in the profession) should be set as the maximum that can be outstanding at any one time for a specific customer. It is the author's experience that many firms use such a limit as their credit-granting decision variable; high limits are assigned to very credit-worthy applicants and lower limits to less credit-worthy firms. An alternate view holds that such limits do not maximize profit: "Many companies have elaborate formulas for calculating the credit limits on their customers' accounts. My feeling is that a credit limit is at best useless, and more often counter-productive. Business firms expend a great deal of money and effort to make sales in the first place. If a modest credit sale is profitable, considering the gross margin earned and the credit risk incurred, then a larger sale is apt to be just as profitable in proportion."[7]

According to this view, if it is appropriate to sell the first few units to a customer, any number of other units should also be sold. This is a "credit standard" or "cut-off score"

view of the decision. Data from the questionnaire are presented in Table 5. It would seem that the use of credit limits represented the dominant position as of the time of the survey. Firms using both practices or varying practices among divisions or markets were of course free to utilize the "other" response category or check multiple responses. However, the relatively low number of "Other" or multiple responses may indicate that diverse practices within the firm are not common.

TABLE 5

Reported Method of Credit-Granting

Classification	Responses Number	Percent
Cut-off credit standards	30	12.2
Credit limits	191	78.0
Other or multiple responses	24	9.8
Total responses	245	100.0

A final area of credit practice investigated involved the use of interest rates in conjunction with credit management decisions. Interest rates have several applications in this area. They may be used in conjunction with the evaluation of changes in terms of sale or in credit-granting decision models, but probably the most popular current use is in calculating and allocating the cost of carrying accounts receivable (for management information purposes). Several rates are suggested by various authors in the finance literature in conjunction with accounts receivable decision models and cost allocations.[8] In the survey, respondents were asked to indicate the basis for the rate currently in use. All reasonable rates from the finance literature were listed based on the idea that data could be aggregated in analysis. A response category for "traditional or rule-of-thumb" rates was included to partially allow for firms whose methodology is based on some historical or similarly-derived rates rather than on any of the rates in the literature. The data are presented in Table 6. It would seem that the rates in use were as diverse as the literature; some version of the firm's cost of debt, however, appears to be in the plurality. Further, the most common response in the "Other" or multiple response category involved the use of an adjusted prime rate, which would of course reflect conditions in the debt markets.

Conclusions and Recommendations

First let us summarize the survey results regarding several issues in the current practice of accounts receivable management. Large firms currently do not use numerical evaluation methods in evaluating changes in terms of sale but instead usually follow traditional terms in their markets. This is presumably because of a lack of belief in the effect of a change of terms on sales. Implicitly using "cost of information" principles, firms generally collect more information on applicants where potential costs and revenues were greater. The "credit limit" methodology was the predominant one reported in credit-granting. Interest rates in use in conjunction with accounts receivable decisions are diverse,

TABLE 6

Reported Interest Rate in Accounts Receivable Decisions

Classification	Responses Number		Percent	
Don't use these procedures	96		39.2	
Use traditional or rule-of-thumb rates	22		9.0	
Use firm's cost of debt before tax	40	44	16.4	18.0
Use firm's cost of debt after tax	4		1.6	
Use firm's weighted-average cost of capital	25		10.2	
Use firm's weighted-average cost of capital adjusted for risk	8	33	3.3	13.5
Use firm's cost of equity capital	6		2.4	
Use firm's weighted-average cost of capital				
Use current interest rate on U.S. Government Securities	6		2.4	
Other or multiple responses	38		15.5	
Total responses	245		100.0	

with the highest proportion of those using such methodologies utilizing some version of the cost of debt.

A major finding of this survey is that recent innovations in making credit-granting decisions have not yet found their way into the business practices of large U.S. industrial firms. This conclusion did not seem to depend, in any highly significant way, on firm size or business line among the respondents.[9] Given the perceived difficulty of these decisions and the extensive recent advances presented in the academic literature, this area would seem to be a major candidate for policy reconsideration.

Footnotes:

[1]See, for example, S.D. Schall, G.L. Sundem, and W.R. Geijsbeck, Jr., "Survey and Analysis of Capital Budgeting Methods," *Journal of Finance,* March 1978, pp. 281-287, and J.J. Oblak and R.J. Helms, Jr., "Survey and Analysis of Capital Budgeting Methods Used by Multinationals," *Financial Management,* Winter 1980, pp. 37-41.

[2]The one piece of recent research in this area is N.C. Hill, R.A. Wood, and J.R. Sorenson, "Factors Influencing Corporate Credit Policy: A Survey," *Journal of Cash Management,* Fall 1981. This research did not, however, address decision methodologies.

[3]A copy of the questionnaire is available from the author upon request.

[4]In the interests of brevity, breakdowns are not provided herein. They are available from the author.

[5]For an evaluation methodology in such situations, see J.M. Collins, "The Multiperiod Approach to Credit Policy Decision," unpublished, available from J.M. Collins at the University of Tulsa.

[6]The classic reference in default forecasting models is E.I. Altman, "Financial Ratios, Discriminant Analysis, and the Prediction of Corporate Bankruptcy," *Journal of Finance,* September 1968, pp. 589-609. There is, however, considerable other work in this area.

[7]See J.E. Kristy, *Analyzing Financial Statements: Quick and Clean,* Second Edition, Books on Business, Buena Park, California, page 22.

[8]Collins (Footnote 4) provides a literature review regarding such rates.

[9]Several statistical tests were performed to assess interdependences of this sort. No significant relationships were found. Results are available from the author.

Nevada Economic Indicators

Statewide Statistical Data

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
Total Labor Force (000's)	487.0†	487.3†	489.9	488.1	– 1.4	+ 2.5
Total Employment (000's)	442.4†	445.9†	450.7	446.3	– 1.6	+ 6.5
Unemployment (000's)	44.5†	41.3†	39.2	41.7	+ .2	– 27.4
Unemployment Rate	9.1†	8.5†	8.0	8.5	+ 1.6	– 29.3
Unemployment Rate (Seasonally Adjusted)	8.2†	7.7†	7.6	7.8	– 7.1	– 29.9
Agricultural Empl. (000's)	3.5†	3.5†	4.2	3.7	– 14.5	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	412.3†	413.6†	416.4	414.1	– 1.9	+ 6.9
Mining	6.2†	6.3†	6.3	6.3	– 3.6	+ 19.7
Contract Construction	20.1†	20.1†	20.3	20.2	– 10.9	+ 18.9
Manufacturing	19.7†	19.8†	20.0	19.8	+ 3.3	+ 10.2
Transportation & Utilities						
Transportation	13.4†	13.3†	13.3	13.3	+ 1.5	+ 5.8
Railroads	1.4†	1.4†	1.4	1.4	– 16.0	– 17.6
Air	3.0†	3.0†	3.1	3.0	+ 8.3	+ 15.2
Public Utilities	11.4†	11.3†	11.4	11.4	+ 0.0	– 2.3
Total Trade	82.9†	82.0†	81.8	82.2	– 3.3	+ 7.9
Wholesale Trade	13.9†	13.8†	13.9	13.9	– .7	+ 5.6
Retail Trade	69.0†	68.2†	67.9	68.4	– 3.8	+ 8.3
Finance, Ins., Real Estate	19.3†	19.3†	19.4	19.3	+ 2.8	+ 8.4
Service Industries	181.4†	182.1†	183.9	182.5	– 2.2	+ 7.2
Hotels, Amusement and Recreation Combined	117.0†	117.8†	119.4	118.1	– 4.4	+ 8.2
Medical and Health	15.4†	15.5†	15.5	15.5	+ 2.2	– 2.7
Total Government	57.9†	59.4†	60.0	59.1	+ .4	+ .9
Federal	9.6†	9.6†	9.7	9.6	+ 1.0	+ 0.0
State and Local	48.3†	49.8†	50.3	49.5	+ .3	+ 1.1
Education	20.7†	22.1†	22.5	21.8	– .5	+ 6.4
Average Weekly Earnings in Selected Industries						
Mining	546.91†	539.33†	551.10	545.78	+ 1.2	+ 9.9
Construction	607.79†	603.06†	606.81	605.89	+ 3.8	– 2.4
Manufacturing	355.11†	358.00†	354.60	355.90	– 2.3	+ 5.7
Public Utilities	482.76†	469.95†	485.61	479.44	– 2.0	+ 4.1
Trade	265.13†	269.51†	276.00	270.21	– .1	+ 3.8
*Average Weekly Hours in Selected Industries						
Mining	43.2†	42.3†	43.6	43.0	– .6	+ 3.1
Construction	35.9†	35.6†	35.8	35.8	+ 2.8	+ .8
Manufacturing	39.5†	40.0†	39.4	39.6	– .8	+ 4.6
Public Utilities	40.5†	39.0†	40.1	39.9	– .4	– 1.1
Trade	33.1†	33.9†	34.5	33.8	– 1.0	+ .5
Average Hourly Earnings in Selected Industries						
Mining	12.66†	12.75†	12.64	12.68	+ 1.8	+ 6.6
Construction	16.93†	16.94†	16.95	16.94	+ 1.0	– 3.1
Manufacturing	8.99†	8.95†	9.00	8.98	– 1.6	+ 1.1
Public Utilities	11.92†	12.05†	12.11	12.03	– 1.6	+ 5.3
Trade	8.01†	7.95†	8.00	7.99	+ .9	+ 3.3
Construction Activity						
Residential ($000's)	86,500	43,300	81,200	211,000	+ 9.6	– 3.8
Nonresidential ($000's)	16,900	7,400	22,500	46,800	+ 21.6	– 20.7
Nonbuilding ($000's)	8,400	15,300	15,600	39,300	– 27.5	+ 35.1
Total ($000's)	111,800	65,900	119,300	297,000	+ 4.1	– 3.4
# of New Dwelling Units	1,980	833	1,300	4,113	+ 23.4	+ 9.7

Statewide Statistical Data (Continued)

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
Tax Collections ($)						
Liquor	816,765	1,012,082	1,113,968	2,962,815	– 12.7	+ 21.2
Cigarette	1,667,115	1,357,959	1,350,424	4,375,498	+ 10.8	+ 48.5
Fuel	3,359,495	3,303,650	3,297,781	9,960,926	– 7.2	+ 3.0
Quarterly Taxable Sales ($000's)	–	–	–	1,586,582	– 15.1	+ 6.3
Quarterly Gaming Revenues ($000's)	–	–	–	757,709	+ 5.1	+ 16.8
Highway Traffic Flow						
17 Selected Stations (Avg. Daily)	86,907	93,274	102,070	94,083	– 5.2	+ 10.2

† Revised.

Las Vegas Standard Metropolitan Statistical Area

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
Total Labor Force (000's)	274.7†	275.0†	286.2	275.3	– 1.3	+ 2.6
Total Employment (000's)	249.4†	250.4†	252.8	250.9	+ .9	+ 6.2
Unemployment (000's)	25.3†	24.6†	23.4	24.4	– 4.4	– 24.0
Unemployment Rate	9.2†	8.9†	8.5	8.9	– 2.9	– 26.1
Unemployment Rate (Seasonally Adjusted)	8.6†	8.4†	8.5	8.5	– 6.9	– 28.4
Agricultural Employment (000's)	.6†	.6†	.7	.6	– 17.4	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	234.5†	234.2†	235.8	234.8	– 1.5	+ 6.5
Mining	.3†	.3†	.3	.3	– 18.2	+ 0.0
Contract Construction	12.6†	12.6†	12.9	12.7	– 5.7	+ 15.8
Manufacturing	7.5†	7.6†	7.7	7.6	+ 6.0	+ 13.4
Transportation & Utilities						
Transportation	8.1†	8.0†	8.1	8.1	+ 2.5	+ 4.3
Railroads	.5†	.5†	.5	.5	– 21.1	– 25.0
Air	2.5†	2.5†	2.6	2.5	+ 10.1	+ 15.2
Public Utilities	5.9†	5.9†	5.9	5.9	– 1.7	– 2.2
Total Trade	47.5†	47.1†	46.9	47.2	– 3.0	+ 7.4
Wholesale Trade	6.9†	6.9†	7.0	6.9	+ 3.0	+ 13.0
Retail Trade	40.6†	40.2†	39.9	40.2	– 4.0	+ 6.5
Finance, Ins., Real Estate	11.1†	11.1†	11.2	11.1	+ 3.1	+ 8.8
Service Industries	113.8†	113.6†	114.4	113.9	– 1.9	+ 6.4
Hotels, Gaming & Recreation	73.2†	73.1†	73.7	73.3	– 4.3	+ 6.5
Total Government	27.7†	28.0†	28.4	28.0	+ .4	+ 1.9
Federal	5.0†	4.9†	5.0	5.0	+ 1.4	+ 1.4
State and Local	22.7†	23.1†	23.4	23.1	+ .1	+ 2.1
Education	10.6†	10.9†	11.2	10.9	– .3	+ 8.6
Construction Activity						
Las Vegas						
Residential ($000's)	14,839	7,297	10,355	32,491	+ 21.4	+ 8.3
Nonresidential ($000's)	5,070	10,980	3,289	19,339	– 4.6	– 19.8
Total Value ($000's)	19,909	18,277	13,644	51,830	+ 10.2	– 4.2
# of New Family Units	424	183	231	838	– 15.9	+ 98.6
North Las Vegas						
Residential ($000's)	3.340	174	3,336	6,850	+ 24.4	+ 134.6
Nonresidential ($000's)	865	1,388	349	2,602	+ 143.0	+ 91.6
Total Value ($000's)	4,205	1,562	3,685	9,452	+ 43.7	+ 120.9
# of Permits	47	42	97	186	+ 24.8	+ 11.4
Energy Consumption						
Sales (000's KWH)	497,408	420,924	425,270	1,343,602	+ 4.5	+ 8.8
# of Customers	215,024	216,187	217,343	216,184	+ 1.3	+ 5.3
Taxable Sales ($000's)	–	–	–	948,116	– 9.3	+ 10.8
Gaming Revenues ($000's)	–	–	–	520,204	+ 4.8	+ 13.5
Air Transportation-McCarran						
Passengers (Arr. & Depart.)	789,587	814,920	963,246	2,567,753	+ 2.6	– .1
Cargo Enplaned (lbs.)	949,211	853,052	923,772	2,726,035	– 23.1	– .3
Cargo Deplaned (lbs.)	1,857,894	1,517,939	1,918,988	5,294,821	– 3.1	+ 13.2
Highway Traffic Flow						
4 Selected Stations (Avg. Daily)	26,726	28,392	30,371	28,496	– 3.2	+ 7.4
Room Tax ($)						
Clark County	1,534,689	1,540,956	1,993,461	5,069,106	+ 4.3	+ 17.9
Las Vegas City	253,098	267,180	305,665	825,943	+ 10.8	+ 19.1
SMSA Total	1,794,812	1,815,868	2,307,351	5,918,031	+ 5.0	+ 18.1

†Revised.

Reno Standard Metropolitan Statistical Area

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
Total Labor Force (000's)	132.2†	132.3†	132.7	123.4	– 1.8	+ 2.2
Total Employment (000's)	121.7†	123.3†	124.3	123.1	– 2.2	+ 6.7
Unemployment (000's)	10.5†	9.0†	8.4	9.3	+ 4.5	– 34.4
Unemployment Rate	7.9†	6.8†	6.3	7.0	+ 5.5	– 36.2
Unemployment Rate (Seasonally Adjusted)	6.6†	5.7†	5.6	6.0	– 13.1	– 35.8
Agricultural Employment (000's)	.4†	.4†	.5	.4	– 13.3	+ 0.0
Establishment Based Industrial Employment						
Total All Industries (000's)	113.3†	1142†	114.8	114.1	– 2.8	+ 7.1
Mining	.6†	.7†	.7	.7	– 13.0	+ 25.0
Contract Construction	5.1†	5.0†	4.9	5.0	– 15.7	+ 29.3
Manufacturing	7.8†	7.8†	7.8	7.8	– .8	+ 8.8
Transportation & Utilities						
Transportation	4.0†	4.0†	4.0	4.0	+ 1.7	+ 10.1
Railroads	.4†	.4†	.4	.4	– 14.3	– 14.3
Public Utilities	4.1†	4.0†	4.0	4.0	+ 0.0	– 4.0
Total Trade	25.4†	25.1†	25.2	25.2	– 3.3	+ 8.6
Wholesale Trade	5.9†	5.9†	6.0	5.9	– 3.8	– 1.1
Retail Trade	19.5†	19.2†	19.2	19.3	– 3.2	+ 12.0
Finance, Ins., Real Estate	6.3†	6.2†	6.2	6.2	+ 1.1	+ 4.5
Service Industries	43.6†	44.3†	44.8	44.2	– 3.4	+ 7.5
Hotels, Gaming & Recreation	27.3†	27.9†	28.5	27.9	– 7.5	+ 11.3
Total Government	16.4†	17.1†	17.2	16.9	+ .2	+ .4
Federal	2.8†	2.8†	2.8	2.8	+ 0.0	+ 0.0
State and Local	13.6†	14.3†	14.4	14.1	+ .2	+ .5
Education	6.4†	7.1†	7.2	6.9	– 1.9	+ 5.1
Construction Activity						
Reno						
Residential ($000's)	3,049	8,616	4,333	15,998	+ 42.0	+ 141.2
Nonresidential ($000's)	1,469	2,096	395	3,960	– 34.7	– 76.0
Total Value ($000's)	4,518	10,712	4,728	19,958	+ 8.9	– 13.7
# of New Family Units	59	150	52	261	– 9.1	+ 56.3
Sparks						
Residential ($000's)	911	2,383	2,679	5,973	+ 53.6	+ 35.0
Nonresidential ($000's)	1,378	1,793	1,519	4,690	+ 54.8	– 38.5
Total Value ($000's)	2,289	4,176	4,198	10,663	+ 54.2	– 11.5
# of New Family Units	18	54	59	131	+ 44.0	+ 36.5
Washoe County (Unincorporated)						
Residential ($000's)	3,757	6,453	5,077	15,287	+ 9.2	+ 94.3
Nonresidential ($000's)	2,145	1,939	1,427	5,511	+ 24.7	+ 267.2
Total Value ($000's)	5,902	8,392	6,504	20,798	+ 12.9	+ 122.0
# of New Family Units	37	76	56	169	+ 29.0	+ 65.7
Taxable Sales ($000's)	–	–	–	402,595	– 11.0	+ 18.8
Gaming Revenues ($000's)	–	–	–	143,464	+ 3.0	+ 26.0
Air Transportation-Reno						
Passengers (Arr. & Depart.)	220,163	244,748	283,935	748,846	+ 7.5	+ 8.4
Cargo Enplaned (lbs.)	435,808	575,419	646,594	1,657,821	– 21.1	+ 13.7
Cargo Deplaned (lbs.)	598,112	631,904	678,347	1,908,363	– 19.5	+ 10.1
Highway Traffic Flow						
7 Selected Stations (Avg. Daily)	50,700	54,759	60,177	55,212	– 4.6	+ 11.9
Room Tax ($)						
Washoe County	61,784	60,509	64,763	187,056	– 8.6	+ 25.8
Reno	412,645	426,662	599,872	1,439,179	– 35.7	+ 38.0
Sparks	28,314	27,373	37,050	92,737	– 37.2	+ 40.1
SMSA Total	502,743	514,544	701,665	1,718,952	– 33.7	+ 36.6

† Revised.

Nevada Statistical Data by County

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
CARSON CITY						
Total Labor Force	20,510†	20,490†	20,530	20,510	– .0	+ .0
Total Employment	18,240†	18,440†	18,600	18,426	– 1.2	+ 4.4
Unemployment	2,270†	2,050†	1,930	2,083	+ 11.6	– 27.2
Unemployment Rate	11.1†	10.0†	9.4	10.2	+ 11.7	– 27.0
Construction Activity						
Residential Value ($000's)	842	1,159	1,043	3,044	– 19.4	+ 75.1
Nonresidential Value ($000's)	1,149	742	372	2,263	+ 14.8	+ 271.0
Total Value ($000's)	1,991	1,901	1,415	5,307	– 7.7	+ 126.0
# of New Family Units	14	22	13	49	– 27.9	+ 88.5
Taxable Sales ($000's)	–	–	–	55,603	– 12.1	+ 26.9
Gaming Revenues ($000's)	–	–	–	8,303	– 1.9	+ 26.6
CHURCHILL						
Total Labor Force	6,580†	6,590†	6,640	6,603	– .7	+ 3.8
Total Employment	5,680†	5,760†	5,890	5,776	– 2.4	+ 9.3
Unemployment	900†	830†	750	826	+ 12.7	– 23.2
Unemployment Rate	13.7†	12.6†	11.3	12.5	+ 13.6	– 26.0
Construction Activity						
Residential Value ($000's)	112	100	335	547	– 16.0	+ 62.3
Nonresidential Value ($000's)	47	0	0	47	– 92.1	– 79.7
Total Value ($000's)	159	100	335	594	– 52.2	+ 26.7
# of New Family Units	2	1	5	8	+ 14.3	+ 60.0
Taxable Sales ($000's)	–	–	–	14,938	– 14.1	+ 26.0
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
DOUGLAS						
Total Labor Force	8,460†	8,450†	8,560	8,490	– 1.5	– .4
Total Employment	7,740†	7,860†	7,980	7,860	– 2.4	+ 5.2
Unemployment	720†	590†	580	630	+ 11.2	– 40.0
Unemployment Rate	8.5†	7.0†	6.7	7.4	+ 12.7	– 39.8
Taxable Sales ($000's)	–	–	–	51,944	+ 10.3	+ 24.0
Gaming Revenues ($000's)	–	–	–	64,155	+ 13.6	+ 25.5
ELKO						
Total Labor Force	12,740†	12,660†	12,840	12,746	– 1.4	+ .8
Total Employment	11,520†	11,630†	11,840	11,663	– 3.3	+ 5.0
Unemployment	1,220†	1,030†	1,000	1,083	+ 25.0	– 29.7
Unemployment Rate	9.6†	8.1†	7.8	8.5	+ 27.5	– 30.3
Construction Activity						
Elko City						
Residential ($000's)	126	81	827	1,034	+ 105.6	+ 180.2
Nonresidential ($000's)	149	6	51	206	– 92.0	– 76.9
Total Value ($000's)	275	87	978	1,340	– 56.4	+ 6.2
# of New Dwelling Units	2	1	31	34	+ 142.9	+ 325.0
Taxable Sales ($000's)	–	–	–	37,723	– 6.5	+ 35.7
Gaming Revenues ($000's)	–	–	–	14,655	+ 15.7	+ 11.2
ESMERALDA						
Total Labor Force	290†	270†	270	276	– 29.7	– 35.7
Total Employment	250†	220†	220	230	– 30.3	– 35.5
Unemployment	40†	50†	50	46	– 26.3	– 36.4
Unemployment Rate	15.2†	19.0†	17.0	17.1	+ 9.2	– 1.2
Taxable Sales ($000's)	–	–	–	1,843	+ 7.3	+ 11.0
EUREKA						
Total Labor Force	700†	710†	740	716	– 4.9	– 2.3
Total Employment	630†	640†	670	646	– 5.4	+ 4.9
Unemployment	70†	70†	70	70	+ 0.0	– 40.0
Unemployment Rate	9.3†	9.9†	9.3	9.5	+ 1.8	– 40.5
Taxable Sales	–	–	–	2,965	– 28.7	+ 95.8

Nevada Statistical Data by County (Continued)

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
HUMBOLDT						
Total Labor Force	5,440†	5,380†	5,510	5,443	+ 2.3	– 1.2
Total Employment	4,730†	4,780†	4,950	4,820	+ .1	– 3.2
Unemployment	710†	600†	560	623	+ 23.0	– 25.8
Unemployment Rate	13.0†	11.2†	10.1	11.4	+ 21.2	– 25.1
Taxable Sales ($000's)	–	–	–	20,349	– 25.7	– .8
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
LANDER						
Total Labor Force	2,370†	2,400†	2,460	2,410	– 5.2	+ 4.2
Total Employment	2,150†	2,200†	2,260	2,203	– 5.4	+ 14.8
Unemployment	220†	200†	200	206	– 3.1	– 47.5
Unemployment Rate	9.4†	8.3†	8.3	8.7	+ 4.0	– 49.0
Taxable Sales ($000's)	–	–	–	8,746	+ 7.9	– 4.5
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
LINCOLN						
Total Labor Force	2,540†	2,530†	2,510	2,526	– 3.1	– 2.1
Total Employment	2,340†	2,350†	2,360	2,350	– 3.6	+ 4.8
Unemployment	200†	180†	150	176	+ 3.9	– 47.5
Unemployment Rate	7.7†	7.2†	6.1	7.0	+ 7.7	– 46.6
Taxable Sales ($000's)	–	–	–	2,015	+ 2.1	+ 26.3
LYON						
Total Labor Force	5,530†	5,600†	5,750	5,626	+ 1.0	+ 10.2
Total Employment	4,850†	4,970†	5,110	4,976	– .9	+ 17.7
Unemployment	680†	630†	640	650	+ 18.2	– 25.9
Unemployment Rate	12.4†	11.2†	11.1	11.6	+ 17.2	– 32.5
Construction Activity						
Residential Value ($000's)	98	148	306	184	NA	NA
Nonresidential Value ($000's)	26	23	81	43.3	NA	NA
Total Value ($000's)	124	171	387	227.3	NA	NA
# of New Family Units	3	3	7	4.3	NA	NA
Taxable Sales ($000's)	–	–	–	11,713	+ 2.1	+ 23.5
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
MINERAL						
Total Labor Force	3,820†	3,800†	3,910	3,843	– 1.9	+ 9.9
Total Employment	3,550†	3,560†	3,680	3,603	– 2.3	+ 13.8
Unemployment	270†	220†	230	240	+ 4.3	– 27.3
Unemployment Rate	7.1†	5.8†	5.8	6.2	+ 6.9	– 34.2
Taxable Sales ($000's)	–	–	–	6,070	+ 14.5	+ 39.0
Gaming Revenues	–	–	–	NA	NA	NA
NYE						
Total Labor Force	3,490†	3,510†	3,550	3,516	– 3.1	– 2.6
Total Employment	3,300†	3,320†	3,370	3,330	– 2.6	+ 3.4
Unemployment	190†	190†	180	186	– 11.1	– 52.1
Unemployment Rate	5.5†	5.5†	5.2	5.4	– 7.4	– 49.7
Taxable Sales ($000's)	–	–	–	17,466	– .1	+ 18.1
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
PERSHING						
Total Labor Force	1,810†	1,810†	1,840	1,820	– 4.2	+ 14.7
Total Employment	1,660†	1,670†	1,710	1,680	– 6.7	+ 16.9
Unemployment	150†	140†	130	140	+ 40.0	– 6.7
Unemployment Rate	8.2†	7.9†	6.9	7.7	+ 43.7	– 18.7
Taxable Sales ($000's)	–	–	–	2,810	– 11.4	– 1.9
Gaming Revenues ($000's)	–	–	–	NA	NA	NA

Nevada Statistical Data by County (Continued)

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
STOREY						
Total Labor Force	1,240†	1,270†	1,270	1,260	– 7.4	+ 16.7
Total Employment	1,000†	1,050†	1,060	1,036	– 12.1	+ 18.3
Unemployment	240†	220†	210	223	+ 24.1	+ 9.8
Unemployment Rate	19.6†	17.5†	16.7	17.9	+ 33.2	– 4.9
Taxable Sales ($000's)	–	–	–	1,580	– 6.3	+ 67.2
Gaming Revenues ($000's)	–	–	–	NA	NA	NA
WHITE PINE						
Total Labor Force	4,630†	4,580†	4,670	4,626	– 1.3	+ 14.6
Total Employment	3,780†	3,800†	3,910	3,830	– 2.4	+ 18.6
Unemployment	850†	780†	760	796	+ 4.4	– 1.2
Unemployment Rate	18.4†	17.0†	16.2	17.2	+ 5.7	– 14.0
Construction Activity						
Total Value ($000's)	54	105	178	337	– 73.5	+ .9
# of Permits	13	22	20	55	+ 10.0	+ 19.6
Taxable Sales ($000's)	–	–	–	8,817	– 20.5	+ 12.0
Gaming Revenues ($000's)	–	–	–	NA	NA	NA

† Revised.

Selected U.S. Economic Indicators

Consumer Price Index & Indexes of Selected Categories All Urban Consumers (1967 = 100%)

	January 1984	February 1984	March 1984	1st Quarter 1984	PERCENT CHANGE 4th Quarter-1983 1st Quarter-1984	PERCENT CHANGE 1st Quarter-1983 1st Quarter-1984
All Items	305.2	306.6	307.3	306.4	+ 1.1	+ 4.5
Food	299.4	302.1	294.3	298.6	+ 1.9	+ 3.3
Housing	329.2	331.0	331.5	330.6	+ 1.1	+ 3.8
Apparel and Upkeep	196.4	196.2	198.8	197.1	– 1.5	+ 2.4
Transportation	306.0	305.8	306.9	306.2	+ .1	+ 5.6
Medical Care	369.5	373.2	374.5	372.4	+ 2.1	+ 6.3

Producer Price Indexes for Selected Commodity Groupings (1967 = 100%)

All Commodities	308.1	308.8	311.1	309.3	+ 1.1	+ 3.0
Fuel and Power	655.8	656.7	659.6	657.4	– 1.5	– 1.9
Machinery and Equipment	289.6	290.4	291.2	290.4	+ 0.8	+ 2.2
Metals and Metal Products	312.7	314.6	316.6	314.6	+ 1.2	+ 3.8
Nonmetallic Mineral Products	328.8	332.3	333.6	331.6	+ 0.9	+ 3.0
Textile Products & Apparel	208.0	209.3	209.9	209.1	+ 1.1	+ 3.0

U.S. Labor Force

Civilian Labor Force (000's)	111,025	111,368	111,828	111,407	– .5	+ 1.5
Total Employment (000's)	101,270	101,961	102,770	102,000	– 0.8	+ 4.6
Unemployment (000's)	9,755	9,407	9,057	9,406	+ 2.6	– 23.3
Unemployment Rate	8.8	8.5	8.1	8.5	+ 0.0	– 17.5
Unemployment Rate (Seasonally Adjusted)	8.0	7.8	7.8	7.9	– 7.1	– 24.1

DATA SOURCES

Information for statistical tables were developed in cooperation with the following sources:

Bell Telephone Company of Nevada; California Pacific Utilities Co.; Central Telephone Co.; Churchill County Telephone & Telegraph System; Continental Telephone Co.; F. W. Dodge Co.; Elko City Engineer; City of Fallon; Federal Reserve Bank of San Francisco; First American Title Co. of Nevada (Reno); Lake Mead National Recreation Area; Las Vegas Convention Authority; Las Vegas Dept. of Building & Safety; Lincoln County Telephone System; McCarran International Airport; Moapa Valley Telephone Co.; Mt. Wheeler Power Co.; Nevada Dept. of Highways; Nevada Department of Taxation - Cigarette, Liquor, Fuel, and Sales and Use Tax Divisions; Nevada Employment Security Dept.; Nevada Gaming Commission; Nevada Power Co. - Las Vegas and Elko Divisions; Nevada Telephone & Telegraph Co.; North Las Vegas Building Dept.; Reno Building Inspection Dept.; Reno International Airport; Reno-Sparks Convention Authority; Rio Virgin Telephone Co.; Sparks Convention Authority; Rio Virgin Telephone Co.; Sierra Pacific Power Co.; Sparks Building Dept.; U.S. Dept. of Agriculture-Statistical Reporting Service; U.S. Dept. of Commerce-Bureau of Economic Analysis; Dept. of Labor - Bureau of Labor Statistics; White Pine County Regional Planning Commission.